Meaning in life and psychological well-being in addiction, cancer, and university students

Sentido en la vida y bienestar psicológico en adicción, cáncer y estudiantes universitarios

Tesis doctoral

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por inculcarme el valor académico
como vía de contribución a la sociedad.

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Abstract

The main aim of this doctoral dissertation was to advance research on meaning in life and its relationship with mental health. To this end, the role of meaning in life in the well-being of three distinct populations was analyzed: people with addiction, cancer patients, and university students. The thesis research is theoretically framed from existential positive psychology (PP2.0, Wong, 2009, 2011a), a paradigm that claims the importance of treating and integrating both the positive aspects of living (e.g., positive emotions and relationships) and the negative aspects of human existence (e.g., suffering and death) to achieve optimal functioning and personal flourishing. In line with Viktor E. Frankl's ideas, positive existential psychology considers that the most adaptive coping mechanism that allows us to transcend suffering and find greater personal prosperity is the use of meaning in life. This dissertation includes a theoretical review on different topics related to meaning in life and three empirical studies that provide evidence on the importance of this construct in psychological well-being.

As a starting point, a re-conceptualization of addiction was made by criticizing the brain disease model and supporting a meaning-centered approach. Addiction is widely considered a chronic brain disease. However, this biomedical model has serious epistemological and practical limitations. From a more pluralistic perspective, we discuss the problematic self-regulation often observed in people with addiction. People with this problem, whether related to substance abuse, gambling, surfing the internet and social networks, shopping, or eating, often manifest existential struggles that can explain their addiction's development and maintenance. Relational problems, avoidance of guilt and responsibility, and lack of meaning in life have been evidenced in the literature. At the base of addiction, there seems to be both maladjustment in coping with the negative side of life and a problematic search for positive emotions that cannot be obtained naturally from social interactions. Therefore, the Meaning-Centered Approach (MCA) is proposed for addiction recovery. Based on positive existential psychology, this approach aims to help clients find purpose in life and integrate them with society. MCA can be an essential complement for conventional addiction treatments.

Study 1 aimed to adapt the Personal Meaning Profile-Brief (PMP-B, McDonald et al., 2012) to the Spanish-speaking population and investigate its psychometric properties. The PMP-B is a 21-item instrument that measures meaning in life through

seven sources: relationship, intimacy, achievement, self-acceptance, self-transcendence, fair treatment, and religion. Before this study, there was no Spanish instrument with validated scores to measure standardized sources of meaning in life. Participants in Study 1 were 546 Spanish adults composed of a community sample (n = 171) and university students (n = 375). The Spanish versions of the PMP-B, the Ryff's Scales of Psychological Well-Being (Díaz et al., 2006; original, Ryff, 1989), and the Depression Anxiety Stress Scale (DASS-21, Bados et al., 2005; original, Brown et al., 1997) were administered. The results showed that the Spanish version of the PMP-B has a bifactorial structure with one general factor (meaning in life) and seven sub-factors (sources of meaning). In addition, measurement invariance was found between ages, gender, and samples. Internal consistency and test-retest reliability were satisfactory. Older people showed higher PMP-B scores than younger people. The PMP-B scores, especially relational sources of meaning, were positively associated with psychological well-being and negatively with psychological distress, mainly with depression. The validity evidence collected in Study 1 supports the reliable use of the PMP-B to measure meaning in life among the Spanish adult population. The PMP-B can make a valuable contribution to the meaning-centered research. In the subsequent studies of this dissertation, this tool was used.

Study 2 was carried out among the oncological population. Its purpose was to analyze the impact of a cancer diagnosis on personal values, exploring how adaptability in the values system influenced the patients' quality of life. The study included 144 cancer patients registered in the Hospital of Torrecárdenas (Almería) and a healthy control group consisting of 158 adults with similar demographic characteristics. To measure the change in values retrospectively, we developed the Valued Living Questionnaire - Perceived Change (VLQ-PC), a modified version of the Valued Living Questionnaire (VLQ, Wilson et al., 2010). The psychometric properties of the VLQ-PC evaluated were satisfactory, showing various indices of reliability and validity. The results indicated that cancer patients had greater meaning in life, scored higher in the values of tradition and benevolence, showed higher self-acceptance levels, and greater use of religion than healthy adults. Besides, most cancer patients perceived a significant change in their personal values since diagnosis, compared to their counterparts. This values change consisted of giving greater importance and becoming more personally involved in areas such as family, intimate relationships, parenting, friendship, recreation, spirituality, citizenship, physical care, and self. However, values such as work, power, and stimulation decreased in importance after diagnosis. Those patients who showed this change in values

benefited from higher levels of meaning in their lives and better indices of quality of life than patients who showed inflexibility in their values system. The findings of Study 2 demonstrate the clinical relevance of the adaptability of the patient's meaning in life to the cancer experience, providing an instrument with validated scores to measure perceived changes in values. The VLQ-PC can be particularly useful in the growing interventions focused on meaning to the oncological population.

Study 3 aimed to design and implement a pilot intervention to promote meaning in life through death awareness and prosociality in close relationships. Despite the strong theoretical link between prosociality and meaning in life, very few experimental studies have provided evidence of the causal relationship between these variables. The intervention consisted of five sessions, including a group introduction to Frankl's and Wong's theories, a group guided meditation to imagine receiving a cancer diagnosis, an individual conversation about different existential issues (values, life history, relationships, death, and self-transcendence), and two sessions with group dynamics aimed to generate intimacy and prosociality. The intervention was carried out in a group of 25 university students. The results were compared with a control group composed of 22 students. Quantitative measures were applied at three points (pre, post, and follow-up after four months), while qualitative measures were used at the end of the intervention. The results indicated that the experimental group increased their levels of prosociality and self-transcendence, giving more importance to social areas in their lives, especially intimate relationships for which they were more involved after the intervention, as compared to the control group. Consequently, participants in the intervention showed an increase in their meaning in life maintained at follow-up. In addition, this group reported greater personal growth, greater self-worth, and lower stress levels than the control group at the end of the intervention. Study 3 provides evidence of the prosocial and relational nature of meaning in life as well as points out numerous personal benefits from developing death awareness, prosociality, and interpersonal closeness.

Finally, we included a chapter to discuss the relationship between death and meaning in life. In this chapter, we explain the difficulty of the psychological process of dying in Western cultures, making a brief proposal on how to live meaningfully through the last moments of life. The practice of self-transcendence at various levels is presented as the best psychological tool against death anxiety. Additionally, we discuss the usefulness of death awareness to live more meaningfully at any time in our lives.

Resumen

El objetivo principal de esta tesis doctoral fue avanzar la investigación sobre el sentido en la vida y su relación con la salud mental. Con este fin, se analizó el papel del sentido en la vida en el bienestar de tres poblaciones: personas con adicción, pacientes con cáncer y estudiantes universitarios. La investigación de la tesis se enmarca teóricamente desde la psicología existencial positiva (PP2.0, Wong, 2009, 2011a), un paradigma que reivindica la importancia de tratar e integrar tanto los aspectos positivos (p. ej., emociones y relaciones positivas) como los aspectos negativos de la existencia humana (p. ej., sufrimiento y muerte) para lograr un mayor bienestar y prosperidad personal. En línea con las ideas de Viktor E. Frankl (1905–1997), la psicología existencial positiva considera que el mecanismo principal de afrontamiento que permite transcender el sufrimiento y alcanzar un funcionamiento óptimo es el uso del sentido en la vida. La tesis abarca tanto una revisión teórica sobre diferentes temáticas relacionadas con el sentido en la vida, como tres estudios empíricos que aportan evidencia sobre la importancia de este constructo en el bienestar psicológico.

Como punto de partida, se hizo una re-conceptualización de la adicción criticando el modelo de la enfermedad en el cerebro, y apoyando un enfoque centrado en el sentido. La adicción es ampliamente considerada como una enfermedad crónica del cerebro. Sin embargo, este modelo biomédico presenta serias limitaciones epistemológicas y prácticas. Desde un enfoque más pluralista, discutimos sobre la auto-regulación problemática que suele observarse en personas con adicción. Las personas con este problema, ya sea relacionado con el abuso de sustancias, el juego, el surfeo por internet y redes sociales, las compras o la alimentación, suelen manifestar luchas existenciales que pueden explicar el desarrollo y mantenimiento de su adicción. Los problemas relacionales, la evasión de la culpa y la responsabilidad, y la falta de sentido en la vida han sido evidenciados en la literatura. En la base de la adicción parece haber tanto una desadaptación a la hora de afrontar el lado más negativo de la vida como una búsqueda problemática de emociones positivas que no se pueden obtener naturalmente de las interacciones sociales. Por ello, se propone el enfoque centrado en el sentido (MCA por sus siglas en inglés) para el tratamiento de la adicción. Basado en la psicología existencial positiva, este enfoque pretende ayudar a los clientes a encontrar un propósito en la vida e

integrarlos en la sociedad. El enfoque centrado en el sentido puede ser un complemento fundamental para los tratamientos convencionales para las adicciones.

El Estudio 1 tuvo como principal objetivo adaptar el Personal Meaning Profile-Brief (PMP-B; McDonald et al., 2012) a la población hispanohablante e investigar sus propiedades psicométricas. El PMP-B es un instrumento de 21 ítems que mide el sentido en la vida a través de siete fuentes: relaciones, intimidad, logro, auto-aceptación, auto-transcendencia, trato justo y religión. Antes de este estudio, no disponíamos de un instrumento con puntuaciones validadas en español que midiera fuentes de sentido en la vida estandarizadas. Los participantes del Estudio 1 fueron 546 adultos españoles compuestos de una muestra comunitaria ($n = 171$) y estudiantes universitarios ($n = 375$). Se administraron las versiones en español del PMP-B, las Ryff's Scales of Psychological Well-Being (Díaz et al., 2006; original, Ryff, 1989) y la Depression Anxiety Stress Scale (DASS-21, Bados et al., 2005; original, Brown et al., 1997). Los resultados mostraron que la versión española del PMP-B tiene una estructura bifactorial con un factor general (sentido en la vida) y siete subfactores (fuentes de sentido). Además, se encontró invarianza de medida entre edades, género y muestras. La consistencia interna y la fiabilidad test-retest fueron satisfactorias. Las personas de mayor edad mostraron puntuaciones más altas en el PMP-B que los más jóvenes. Las puntuaciones del PMP-B, especialmente las fuentes de sentido relacionales, se asociaron positivamente con el bienestar psicológico y negativamente con el malestar psicológico, principalmente con depresión. La evidencia de validez recogida en este estudio apoya el uso fiable del PMP-B para medir el sentido en la vida. El PMP-B puede suponer una valiosa contribución en la investigación sobre el sentido en la vida. En los siguientes estudios de la tesis se hizo uso de esta herramienta.

El Estudio 2 se realizó en población oncológica. Su objetivo fue analizar el impacto de un diagnóstico de cáncer en los valores personales, explorando cómo la adaptabilidad en el sistema de valores influía en la calidad de vida de los pacientes. En el estudio participaron 144 pacientes con cáncer adscritos al Hospital de Torrecárdenas (Almería) y un grupo control sin enfermedad compuesto de 158 adultos con similares características demográficas. Para medir retrospectivamente el cambio de valores se desarrolló el Valued Living Questionnaire – Perceived Change (VLQ-PC), una versión modificada del Valued Living Questionnaire (VLQ, Wilson et al., 2010). Las propiedades psicométricas del VLQ-PC evaluadas fueron satisfactorias, mostrando diversos índices de fiabilidad y validez. Los resultados indicaron que los pacientes con cáncer presentan

un mayor sentido en la vida, valores más altos en tradición y en benevolencia, mayor auto-aceptación y mayor uso de la religión que los adultos sin esta enfermedad. Asimismo, la mayoría de pacientes con cáncer percibieron un cambio significativo en sus valores personales desde el diagnóstico, en comparación con sus homólogos. Este cambio de valores consistió en dar una mayor importancia e implicarse más personalmente en áreas como la familia, las relaciones íntimas, los hijos, los amigos, el ocio, la espiritualidad, la ciudadanía, el cuidado físico, así como uno mismo. Por otro lado, valores como el trabajo, el poder y la estimulación disminuyeron en importancia tras el diagnóstico. Aquellos pacientes que mostraban este cambio de valores disfrutaban de un mayor sentido en sus vidas y mejores índices de calidad de vida que los pacientes que mostraban inflexibilidad en el sistema de valores. Los hallazgos de este estudio manifiestan la importancia clínica de la adaptabilidad del sentido en la vida a la experiencia del cáncer, aportando un instrumento con puntuaciones validadas para medir el cambio de valores cuyo uso puede resultar particularmente útil en las crecientes intervenciones centradas en el sentido para población oncológica.

El Estudio 3 tuvo como objetivo diseñar e implementar una intervención piloto para promover el sentido en la vida a través de la consciencia de la muerte y la prosocialidad en las relaciones cercanas. A pesar del fuerte vínculo teórico entre la prosocialidad y el sentido en la vida, muy pocos estudios experimentales han aportado evidencia de la relación causal entre estas variables. La intervención consistió en cinco sesiones, incluyendo una introducción grupal a las teorías de Frankl y Wong, una meditación guiada en grupo para imaginar el recibimiento de un diagnóstico de cáncer, una conversación individual sobre diferentes cuestiones existenciales (valores, historia de vida, relaciones, muerte y auto-transcendencia), y dos sesiones con dinámicas grupales dirigidas a generar intimidad y prosocialidad. La intervención se llevó a cabo en un grupo de 25 estudiantes universitarios. Los resultados se compararon con un grupo control de otros 22 estudiantes. Se utilizaron tanto medidas cuantitativas, aplicadas en tres puntos (pre, post y seguimiento a los cuatro meses), como medidas cualitativas, recogidas al terminar la intervención. Los resultados mostraron que, en comparación con el grupo control, el grupo experimental incrementó sus niveles de prosocialidad y autotranscendencia, dando más importancia a las áreas sociales en sus vidas, especialmente las relaciones íntimas para las que estuvieron significativamente más involucrados tras la intervención. En consecuencia, los participantes en la intervención mostraron un incremento en el sentido en sus vidas que llegó a mantenerse en el

seguimiento. Además, este grupo reportó mayor crecimiento personal, mayor valor a sí mismos y menores niveles de estrés que el grupo control al finalizar la intervención. El Estudio 3 aporta evidencia del carácter prosocial y relacional del sentido en la vida, así como señala numerosos beneficios personales fruto de desarrollar la consciencia de la muerte, la prosocialidad y la cercanía interpersonal.

Finalmente, se incluyó un capítulo en el que se profundiza sobre la relación entre la muerte y el sentido en la vida. En este capítulo explicamos la dificultad del proceso psicológico de morir en las culturas occidentales, haciendo una breve propuesta sobre cómo vivir con sentido a través de los últimos momentos de vida. La práctica de la auto-trascendencia a varios niveles se presenta como la mejor herramienta psicológica contra la ansiedad hacia la muerte. Adicionalmente, debatimos sobre la utilidad de la conciencia de la muerte para vivir de manera más significativa en cualquier momento de nuestras vidas.

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List of abbreviations

ACT	Acceptance and Commitment Therapy
AHO	Attitudes towards Helping Others scale
AIC	Akaike's Information Criterion
BAS	Behavioral Activation System
BIS	Behavioral Inhibition System
CFI	Comparative Fit Index
DASS-21	Depression Anxiety Stress Scale
EC	Empathetic Concern scale
FACT-G	Functional Assessment of Cancer Therapy - General
FACIT-Sp	Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being
H1, H2, H3…	Hypothesis 1, Hypothesis 2, Hypothesis 3…
MAAS	Mindfulness Attention Awareness Scale
MMT	Meaning Management Theory
MCA	Meaning-Centered Approach
PMP	Personal Meaning Profile original
PMP-B	Personal Meaning Profile-Brief
PP	First wave of positive psychology
PP2.0	Existential positive psychology, also called "second wave of positive psychology"
PTG	Post-Traumatic Growth
PTSD	Post-Traumatic Stress Disorder
PURE model	Wong's meaning model based on Purpose, Understanding, Responsible Action, and Enjoyment/Evaluation
PVQ	Portrait Values Questionnaire
RMSEA	Root-Mean-Square Error of Approximation
SDT	Self-Determination Theory
SMiLE	Schedule for Meaning in Life Evaluation
SPWB	Ryff's Scales of Psychological Well-Being
SRMR	Standardized Root-Mean-Square Residual
TMT	Terror Management Theory
VLQ	Valued Living Questionnaire
VLQ-PC	Valued Living Questionnaire – Perceived Change

Chapter 1

Theoretical framework: Existential positive psychology (PP2.0)

If there is a meaning in life at all,
then there must be a meaning in
suffering.

VIKTOR E. FRANKL
Man's search for meaning

This dissertation is framed from a paradigm called "existential positive psychology" (Wong, 2009), also labeled as PP2.0 (Wong, 2011a) or the "second wave" of positive psychology (Ivtzan et al., 2015; Lomas & Ivtzan, 2016). This new paradigm has emerged from the integration of humanistic existential psychology and positive psychology. The adjective "existential" alludes to the explicit consideration of the negative aspects of human existence and the quest for meaning in life. These areas have been traditionally collected by existential theories in psychology and philosophy (May, 1961; Wong, 2006; Yalom, 1980). Regarding the term "positive", it highlights the commitment of PP2.0 with the scientific study of those conditions and aspects that make life most worth living. This is the purpose of positive psychology, including areas of study such as happiness, engagement, character strengths, meaning, and positive relationships, among others (Peterson, 2006; Seligman & Csikszentmihalyi, 2000).

The first wave of positive psychology (PP; Seligman & Csikszentmihalyi, 2000) is a paradigm criticized for being focused excessively on positivity and neglecting the negative aspects of living, framing them in a way as if they simply represented the absence of positive states (e.g., Held, 2004; Wong & Roy, 2017). The overemphasized positive message massively spread by PP can be problematic, for example, because it can encourage people to constantly seek positive mood and avoid negative emotions rigidly, which in turn can cause mental health problems (e.g., Chawla & Ostafin 2007). This message in western societies can lead people to live a superficial, hedonistic life, with a visible lack of commitment with values. Acting in accordance with personal values,

particularly when they aim to contribute to others' welfare, often supposes the experience of negative emotions. However, PP2.0 represents the development of this paradigm and, without losing the main objective of positive psychology, overcomes the limitations of the first wave. In addition to the positive qualities of human functioning proposed in the PP research, PP2.0 claims that to bring out the best in people, it is necessary to embrace the dark side of life. In life, suffering is inevitable but also potentially beneficial. Based on this approach, negative emotions, heartbreaking moments, traumas, death, illness, existential abyss, among others, although instinctively can be considered undesirable, they also can be promoters of personal growth and resilience (Wong, 2011a). Additionally, PP2.0 calls for a prosocial, self-transcendental conceptualization of meaning in life instead of a fundamentally self-centered approach.

In the next sections, we explain the basic tenets of PP2.0, which are: a) the adoption of a realistic existential worldview that includes the positive side of life but also the inevitability of negative aspects in human existence, b) the importance of accepting and embracing painful emotions and thoughts, c) a dialectical way of coping with life demands, and d) the human quest for meaning in life.

1.1. A realistic existential worldview including positive and negative aspects of living

The worldview that one uses to interpret and predict life events has a powerful impact on well-being and health. For instance, optimists, people that generally expect positive outcomes in their lives, have statistically better subjective well-being, physical health, higher levels of engagement coping, lower levels of avoidance, more health-protective behaviors, more benefits in the socio-economic world, higher persistence in educational efforts, and better fare in relationships, among others (Carver et al., 2010). Other findings support a negative relationship between optimism and psychological problems such as depression, anxiety, hostility, and sleep disorders (e.g., Conway et al., 2008; Kubzansky et al., 2004).

On the other hand, pessimists, those who generally expect negative things to happen to them, generally show higher tendency to avoidance coping and denial, more distress, poorer quality of life, less social connections, more health-defeating behaviors, less persistence to reach goals, more disengagement from life, and less physical health, among others (Carver et al., 2010). Consistent with these findings, Augusto-Landa et al.

(2011) reported a negative relationship between pessimism and psychological well-being. Other findings also show a positive association of pessimism with depression, anger, anxiety (Kubzansky et al., 2004), and other forms of psychopathology such as sleep disorder and obsessive-compulsive symptoms (Conway et al., 2008).

This sharp division of optimism/pessimism conveys a clear message to the general population, especially in western countries: optimism is good and pessimism is bad. However, the reality is not that simple. Evidence suggests that optimism and pessimism are not opposites; instead, they are separate constructs, and their relationship with well-being is more complex than previously suggested (Kubzansky et al., 2004). Evidence shows that higher levels of optimism are not always better. For instance, Milam et al. (2004) found that moderate levels of optimism are more protective against HIV progression than high and low levels. Other studies reported that unrealistic optimists have poorer health behaviors such as excessive drinking and less inclination to quit smoking because of their overconfidence about the future (e.g., Dillard et al., 2006; Dillard et al., 2009).

Likewise, pessimism is not always bad. For instance, Conway et al. (2008) observed a non-linear relationship between pessimism and health outcomes in grandmothers raising their grandchildren. While low and high levels of pessimism were harmful, moderate levels of pessimism predicted lower levels of obsessive-compulsive behaviors and less hypertension. In this vein, Sweeny and Shepperd (2010) observed that pessimistic students reported lower negative affect and disappointment after exam feedback in comparison with optimistic students. Similarly, in patients who have arthritis, Benyamini (2005) found that high optimism and high pessimism can co-exist, and their interaction increases the frequency of pain-coping strategies. There is also evidence showing that defensive pessimists, those who set low expectations and reflect extensively about outcomes prior to an event, present benefits in task performance and mood regulation (for a review, Chang et al., 2009). Nevertheless, cultural factors must be considered as they can impact the function of optimism and pessimism (Chang et al., 2009).

These findings suggest that although optimism is generally related to positive outcomes and pessimism to negative ones, they are independent worldviews that can co-exist and interact to produce benefits. One person can have both positive and negative expectations about life events. Positive expectations can motivate to persist in the achievement of personal goals. In turn, negative expectations can help to protect against

failures and undesired outcomes. The most adaptive framework seems to be a realistic worldview in which both positive and negative events are moderately expected.

Finally, a realistic existential worldview must also include the topic of death. Death is usually a taboo in western cultures, which is only linked to negative events. For example, Routledge et al. (2010) found that death cognitions can decrease life satisfaction, subjective vitality, meaning in life, and increase negative affect and anxiety. However, this effect was observed only when death thoughts were outside of focal attention. These findings suggest that death thoughts can be problematic only when people do not contact them consciously. Nonetheless, the awareness of death can have psychological benefits. For instance, some studies have supported a positive association of death awareness with meaning in life and quality of life (e.g., Purdy, 2004; Taubman - Ben-Ari, 2011). Death acceptance, versus death denial or avoidance, has also been linked to several positive outcomes (Neimeyer et al., 2004; Wong, 2010a). In the next chapters, we provide additional evidence of the psychological benefits of death awareness.

1.2. The importance of accepting and embracing painful emotions and thoughts

Negative emotions have an important adaptive function in human evolution, particularly in terms of protection (Nesse, 2019). In fact, negative events generally have stronger and more lasting consequences than positive events, for example, in areas such as closed relationships, social network patterns, interpersonal interactions, emotion, learning processes, self, and health (Baumeister et al., 2001). For that reason, the way one relates to adversity and negative emotions is crucial for well-being.

An avoidance style of coping with life demands has been associated with a significant number of psychological problems. For instance, Ben-Zur (2009) found that avoidance-based coping is negatively linked to positive affect and positively associated with negative affect. Blalock and Joiner (2000) reported cognitive avoidance to be a significant predictor of depressive and anxious symptoms in women. Similarly, Elliot et al. (2011) observed in a longitudinal study with undergraduate students that avoidance-based coping undermined subjective well-being. Another study by Dempsey et al. (2000) demonstrated that children experiencing greater levels of violence that used cognitive distraction strategies were at risk of suffering from more posttraumatic stress disorder (PTSD) symptoms.

One of the constructs in the literature that integrates these problematic avoidant strategies is called *experiential avoidance*. Experiential avoidance is described as the unwillingness to remain in contact with aversive private experiences (e.g., bodily sensations, emotions, thoughts, memories) and taking actions to alter those experiences or the contexts that occasion them (Hayes et al., 1996). A review by Chawla and Ostafin (2007) concluded that experiential avoidance influences the development and maintenance of various forms of psychopathology. Additionally, in the last years, growing evidence has shown the detrimental impact of experiential avoidance on mental health. For example, Spinhoven et al. (2014) observed in a longitudinal study that experiential avoidance predicted distress disorders (dysthymia, major depressive disorder, and generalized anxiety disorder) and fear disorders (social anxiety disorder, panic disorder, and agoraphobia). In this line, Machell et al. (2015) found adverse effects of experiential avoidance on daily well-being as evidenced by higher negative affect, lower positive affect, less enjoyment of daily events, and less meaning in life. Overall, these findings show that neglecting or avoiding negative emotions and adversity, as a general rule, is not the most optimal way to achieve and maintain well-being, rather the contrary.

Although adversity is generally undesired, it can also be a strong promoter of personal growth. Several people who experience traumatic events such as the diagnosis of a life-threatening illness, survivors of natural disasters, war veterans, bereaved spouses and parents, and other survivors of a close brush with death, report posttraumatic growth (PTG, e.g., Calhoun & Tedeschi, 2006; Khanna & Greyson, 2015). This PTG is based on a positive change in personal strength, an opening of new possibilities in life, a greater connection with other people, more appreciation of life, and a spiritual change after such events (Calhoun & Tedeschi, 2006). An extensive evidence review of how negative emotions and undesired events can lead to positive outcomes can be seen in Ivtzan et al. (2015), and Kashdan and Biswas-Diener (2014).

In general terms, this phenomenon indicates that growth and distress can actually co-exist. However, adversity does not guarantee growth. PTG seems to largely depend on two interdependent components: a functional *constructive* side (based on openness and acceptance) and a dysfunctional *illusory* side (self-deception or cognitive avoidance, Maercker & Zöllner, 2004; Zoellner & Maercker, 2006). PTG is predicted by the constructive side and posttraumatic stress severity, suggesting that those who suffer to a great degree but approach their experience with acceptance have more potential to grow

(e.g., Görg et al., 2017; Shipherd & Salters-Pedneault, 2018). On the other hand, distorted positive illusions may be helpful, at least in the short term, to counterbalance emotional distress and promote self-consolidation in a dramatic setback (Zoellner & Maercker, 2006). However, if the illusory component serves as a cognitive avoidance strategy in the long term, it can hinder psychological adjustment (e.g., Dempsey et al., 2000).

The studies mentioned above highlight the importance of accepting psychologically painful emotions and thoughts when coping with adversity. *Psychological acceptance*, also called *experiential acceptance*, has been described as a willingness to remain in contact with thoughts and feelings without having to act on them or change them (Hayes et al., 1994). From a behavioral analytic perspective, Cordova (2001) defines acceptance as "allowing, tolerating, embracing, experiencing, or making contact with a source of stimulation, particularly private experiences, that previously evoked escape, avoidance, or aggression" (p. 215). The health benefits of psychological acceptance have been extensively reported in the literature. For instance, acceptance has been considered a principal mechanism of change to improve mental health, quality of life, health behaviors, and patient functioning (Levin et al., 2012; Stockton et al., 2019). It has also been negatively related to a vast amalgam of psychopathology (Hayes et al., 2006). For example, among patients with chronic pain, acceptance has been associated with less pain disability, depression and pain-related anxiety, higher daily uptime, and better functional status (Esteve et al., 2007; McCracken & Eccleston, 2003; McCracken et al., 2004).

Another field that has yielded extensive findings about the impact of psychological acceptance on well-being is *mindfulness*. In the western scientific literature, mindfulness is understood as an awareness of the present moment and a non-judgmental acceptance of one's moment-to-moment experience (Baer, 2003; Kabat-Zinn, 1990). According to meta-analyses, mindfulness-based interventions have been largely successful in improving different aspects of well-being, such as emotional well-being, subjective well-being, and physical well-being (Geiger et al., 2016; Keng et al., 2011). In this vein, experimental studies indicate that even a short mindfulness training can enhance self-regulation and cognitive functioning such as attention, memory, and executive functions (e.g., Chiesa et al., 2011; Eisenbeck et al., 2018; Leyland et al., 2019). Moreover, mindfulness interventions seem to reduce anxiety, depression, and stress (Dunning et al., 2018; Keng et al., 2011; Khoury et al., 2013). Particularly among trauma-exposed adults, mindfulness levels have been associated with less PTSD symptoms (e.g.,

Vujanovic et al., 2009), and mindfulness-based treatments have shown to be effective in reducing PTSD symptomatology (Boyd, et al., 2018). Nonetheless, there is certain controversy about the use of mindfulness and its impact on psychological functioning (Harrington & Dunne, 2015; Walsh, 2016).

For all these reasons, acceptance has gained a particular interest in clinical psychology during the last years, as can be seen by the ever-increasing acceptance-based treatments (e.g., Cramer et al., 2016; Norton et al., 2015; Williams & Lynn, 2010). A paradigm of well-being and happiness that neglects the coping with negative emotions and the dark side of life seems to be incomplete.

1.3. A dialectical way of coping with life demands

Most researchers consider the existence of two central systems of human motivation and behavior regulation: the *approach* system, concerned with obtaining positive outcomes, and the *aversive* system, concerned with avoiding negative outcomes (Gable et al., 2003; Gray, 1987; Skinner, 1953; Wong, 2012a). Personality domains such as cognitive, affective, and behavioral can be organized according to these two systems (Gable et al., 2003). The approach system, also called the Behavioral Activation System (BAS), is sensitive to signals of reward, nonpunishment, and escape from punishment (Fowles, 1980; Gray, 1987). This system is responsible for movements towards desired goals and has been associated with positive affect, optimism, joy, happiness, confidence, and aggression (Gable et al., 2000; Gray & McNaughton, 2000; Meyer et al., 2010; Wingrove & Bond, 1998). In contrast, the aversive system, also called the Behavioral Inhibition System (BIS), is sensitive to signals of punishment, nonreward, and novelty (Carver & White, 1994; Gray, 1987). This system interrupts ongoing behavior that may lead to negative outcomes and prepare for a response. BIS has been associated with negative affect, arousal, anxiety, avoidance behaviors and conflict monitoring (Amodio et al., 2008; Gable et al., 2000; Johnson et al., 2003; Markarian et al., 2013).

It could be understood that BIS and BAS are mere opposites of the same spectrum. However, BIS and BAS are independent, have different neurophysiological bases (Amodio et al., 2008), and interact in a number of ways to influence our behavior (Corr, 2013; Gable et al., 2003). These two systems often exert interdependent joint effects (Corr, 2004), and the activation of both can lead to positive outcomes. For example, an

approach-based coping facilitates the pursuit of self-chosen goals (Sullivan & Rothman, 2008), and some of its strategies, such as problem-solving and behavioral approach, relate positively to positive affect and negatively to negative affect (Ben-Zur, 2009). Similarly, some types of avoidance-based coping, particularly behavioral avoidance, can produce certain benefits in dealing with stressful events and trauma (e.g., Arble & Arnetz, 2017; Dempsey et al., 2000).

However, extreme activation levels of each of these systems can be disadvantageous. For instance, high levels of sensitivity in BAS has been related to bipolar disorder (Fletcher et al., 2013; Johnson et al., 2012), attention-deficit/hyperactivity disorder (Mitchell & Nelson-Gray, 2006), and addiction (e.g., Franken et al., 2006), among others. Likewise, high levels of BIS sensitivity are associated with stress symptoms, emotion regulation difficulties, anxiety, and depression (Johnson et al., 2003; Markarian et al., 2013). Hence, a flexible interaction of these systems with moderate levels, depending on the contextual conditions, is generally health-protective and increases the likelihood of positive outcomes (e.g., Alloy et al., 2008, 2006; Stange et al., 2013; Wong, 2012a).

The importance of the dialectical way of coping with life demands, integrating positives and negatives, has also been evidenced in the Acceptance and Commitment Therapy (ACT, Hayes et al., 1999) literature. ACT is aimed to promote *psychological flexibility* which is defined as "the ability to contact the present moment more fully as a conscious human being, and to either change or persist when doing so serves valued ends" (Hayes et al., 2006, p. 5). Thus, psychological flexibility is based on two interdependent elements: *acceptance* of negative emotions and life aspects that cannot be changed, and *commitment* with personal values through meaningful actions. Its opposite, *psychological inflexibility,* is understood as "the rigid dominance of psychological reactions, over chosen values and contingencies, in guiding action" (Bond et al., 2011, p. 678). Unlike psychological flexibility, psychological inflexibility is characterized by problematic *avoidance* of negative emotions and a *lack of commitment* with personal values.

The positive role of psychological flexibility in mental health has been extensively evidenced. There is growing literature supporting psychological inflexibility as a trans-diagnostic process across several psychological disorders (Bond et al., 2011; Kashdan & Rottenberg, 2010; Levin et al., 2014). Indeed, psychological flexibility has been negatively associated with depression, anxiety, and general psychological distress (e.g., Bond et al., 2011; Masuda & Tully, 2012; Venta et al., 2012). Previous studies have also

evidenced psychological flexibility as a mediator between self-concealment and emotional distress (Masuda, Anderson et al., 2011), self-concealment and disordered eating symptoms (Masuda, Boone et al, 2011), neuroticism and depression (Paulus et al., 2016), and between psychological distress and procrastination (Eisenbeck et al., 2019). Findings outside of the ACT literature further support the relevance of psychological flexibility in health (see Kashdan & Rottenberg, 2010).

ACT interventions have demonstrated a number of psychological benefits across a wide variety of populations (for a review see Gaudiano, 2011; Hayes et al., 2006; Howell & Passmore, 2019; Öst, 2014). ACT focuses on a dialectal work with positives and negatives by promoting acceptance of suffering and pain in order to persist in a valued direction. From this perspective, Villatte et al. (2016) studied the impact of the two main components of ACT separately (acceptance and commitment). This study reported that the acceptance component had a greater impact on reducing symptom severity, increasing cognitive defusion, and emotional tolerance, as compared to the commitment component. At the same time, the commitment module had a greater impact on quality of life and values-based actions (Villatte et al., 2016). A meta-analysis of 66 laboratory-based studies has also shown the significant positive effects of the different components of psychological flexibility on health (Levin et al., 2012).

Overall, these findings support the importance of integrating the positive and negative aspects of living when coping with life demands. Well-being and mental health require not only the search for desired aspects of life such as pleasure, happiness, and love, but it also relies on how one deals with the negative side of human existence, namely suffering, pain, fear, anger, loss, trauma, illness, meaninglessness, isolation, and ultimately death. Human beings seem to be biologically and psychologically built to use both positive and negative emotions to adapt to their environment.

1.4. The human quest for meaning in life

The final major area of study in existential positive psychology is meaning in life. The quest for meaning in life and its role in human flourishing has been the focus of many theories in the history of psychology (e.g., Frankl, 1988; May, 1961; Park & Folkman, 1997; Seligman, 2002; Wong & Fry, 1998; Yalom, 1980). Viktor E. Frankl (1905–1997)

is likely the most recognized pioneer in psychology who theorized about the central role of meaning in life in order to understand psychopathology and personal prosperity. As a survivor of Nazi concentration camps, Frankl (1984) argued for the importance of restoring and maintaining a sense of meaning in life to transcend the camp's tragic circumstances. He conceived meaning in life as follows:

> For the meaning of life differs from man to man, from day to day and from hour to hour. What matters, therefore, is not the meaning of life in general but rather the specific meaning of a person's life at a given moment. ... One should not search for an abstract meaning of life. Everyone has his own specific vocation or mission in life to carry out a concrete assignment which demands fulfilment. Therein he cannot be replaced, nor can his life be repeated. Thus, everyone's task is as unique as is his specific opportunity to implement it. (Frankl, 1984, p.108)

In Frankl's description, we observe that the search for meaning in life is understood as something dynamic and unique for each person. For that reason, the use of the term "meaning in life" is considered to be more accurate than the term "meaning of life" (Metz, 2013). Frankl's conception of meaning in life is based on two assumptions: 1) life is potentially meaningful in any situation, no matter how horrible, and 2) humans have an innate capacity for freedom and responsibility to choose to do what is meaningful.

Despite the early contribution of Frankl's theory, it was not until the late 90s, along with the rise of positive psychology (Seligman, 1998; Seligman & Csikszentmihalyi, 2000) that meaning in life and its role in well-being started to gain an in-depth scientific understanding (e.g., Wong & Fry, 1998). According to Seligman (2002), there are three different routes to achieve happiness: the pleasant life, the good life, and the meaningful life. The *pleasant life* is self-focused and implies maximizing pleasure and minimizing pain. The *good life* is the one in which an individual deploys his strengths to engage in life domains such as relationships, parenting, work, and leisure. This lifestyle seeks a state of flow (connectedness, loss of self-consciousness) with others and the activities he does regardless of whether it is pleasurable. The *meaningful life* entails using one's virtues and talents to serve a cause greater than oneself (Seligman, 2002).

These initial approaches facilitated the development of modern theoretical perspectives on meaning in life (e.g., Batthyany & Russo-Netzer, 2014; Hicks & Routledge, 2013; Wong, 2012b). Among these perspectives, existential positive psychology is probably the one that most represents the logical progression of Frankl's original work because of its emphasis on the meaning of suffering and the idea of self-transcendence (Wong, 2014, see Chapter 5).

Two of the most accepted definitions of meaning in life have been provided by Steger et al. (2006) and Reker and Wong (1988). Steger et al. (2006) define meaning in life as the "sense made of, and significance felt regarding, the nature of one's being and existence" (p. 81). In turn, Reker and Wong (1988) describe it as the "cognizance of order, coherence and purpose in one's existence, the pursuit and attainment of worthwhile goals, and an accompanying sense of fulfillment" (p. 221). According to the first definition, meaning is understood in terms of cognitions ("sense made of") and emotions ("significance felt"). This cognitive-emotional conception is widely accepted in the meaning literature. For instance, most of the existing measures of meaning evaluate these areas (Brandstätter et al., 2012). However, in addition to cognitive and emotional elements, Reker and Wong's (1988) definition includes behavioral components (pursuit and attainment of worthwhile goals).

This dissertation adopts the latter perspective and, in line with the PURE model (Wong, 2012a), calls for an integrative conceptualization of meaning that incorporates cognitive, emotional, and behavioral aspects.. Throughout this work, we will empirically support the relevance of this integrative perspective.

In all its definitions, the construct of meaning is at the core of human experience and represents a relevant area in clinical and health psychology (Hicks & Routledge, 2013; Wong, 2012b). For instance, meaning in life has been included as one of the main components of psychological well-being (Ryff, 1989), which has a health-protective role by reducing the risk for disease and promoting length of life (Ryff, 2014a; Ryff et al., 2016). Meaning in life also plays a central role in resilience (Norman, 2000; Ryff, 2014b; Wong & Fry, 1998), happiness (Seligman & Csikszentmihalyi, 2000), and positive affect (King et al., 2006).

Similarly, meaning in life can be a strong protective factor against many psychological issues, for example, emotional distress and suicide risk (Bryan et al., 2013), anxiety (e.g., Breitbart et al., 2010; Miller & Rottinghaus, 2014), and depression (Reker, 1997). Indeed, meaning-centered interventions have demonstrated improvements in

quality of life and well-being, as well as the reduction of psychological distress (Vos, 2016; Vos & Vitali, 2018).

1.5. Sources of meaning in life and personal values

During the last decades, the assessment of meaning in life has aroused particular interest, as evidenced by the ever-increasing number of instruments in this area (Brandstätter et al., 2012). Most of these measures focus on the assessment of subjective global meaning, that is, the extent to which one individual perceives their life as meaningful (e.g., Meaning in Life Questionnaire, MLQ; Steger et al., 2006). However, a subjective global assessment of meaning may not take into account a large part of the meaningfulness phenomenon. To gain a deeper understanding of meaningfulness, we need to know what provides meaning in people's lives, namely the *sources of meaning* (McDonald et al., 2012; Schnell, 2009).

The importance of considering the sources of meaning has been supported by previous studies. Firstly, the findings to date suggest that not all the sources of meaning contribute equally to the sense of meaningfulness (Damásio et al., 2013; Schnell, 2011). For example, harmonic relationships and self-transcendence have been found to contribute actively to a sense of fulfillment, whereas tradition, individualism, and challenge seem to have a limited impact on meaningfulness (Damásio et al., 2013; Schnell, 2011). Secondly, some sources of meaning (e.g., intimacy, relatedness, and self-transcendence) have shown stronger associations with positive mental health than others (e.g., religion; Damásio et al., 2013; Demirbaş-Çelik, 2018; Schnell, 2009). Chapters 3 and 4 provide new insights in this direction. Thirdly, having multiple sources of meaning can be protective so that when a meaning domain is compromised, one can still strengthen other sources to sustain meaning in life (Schnell, 2011). In combination, these findings evidence the multidimensional aspect of meaning (see also Krok, 2018; Zhang et al., 2018).

To identify the prototypical sources of meaning in the general population, Wong (1998) studied the implicit theories of people about what constitutes a meaningful life. He observed that meaning in life is usually found through seven major sources: *relationship* (having friends and being liked and trusted by others), *intimacy* (mutually satisfying family and intimate relationships), *achievement* (striving for and attaining

significant life goals), *self-acceptance* (accepting personal limitations and suffering), *self-transcendence* (contributing to a higher cause beyond the self), *fair treatment* (perceiving fairness from society and life), and *religion* (relationship with "God"). Although this study was originally carried out in Canada, these sources of meaning have also been identified in other cultures (e.g., Emmons, 2003; Lin, 2001; Schnell, 2004, 2009; Takano & Wong, 2004) and are closely related to the basic human values found by Schwartz (1994, see Chapter 4).

The aforementioned sources of meaning are consistent with the three pathways proposed by Frank (1988) to find meaning in life: a) *attitudinal values* which are related to finding significance in suffering, maintaining faith and courage, b) *experiential values* which consist of appreciating beauty in life, including love, and c) *creative values* which are based on creating or pursuing meaningful goals, generally aimed at the betterment of others.

These sources also reflect the five components of meaning in life proposed by Wong (1998, see also Reker & Wong, 1988): cognitive, motivational, affective, relational, and personal. The *cognitive component* consists of beliefs and interpretations of the world (e.g., the belief that there is an ultimate purpose in life or the belief in a better future). The *motivational component* encompasses the pursuit and attainment of worthwhile goals (e.g., striving towards personal growth or making a significant contribution to society). The *affective component* reflects feelings of contentment and fulfillment (e.g., feeling satisfied with life or feeling fulfilled with one's accomplishments). The *relational component* represents the importance of having harmonic relationships and being part of a community (e.g., having a mutually satisfying intimate relationship or having a number of good friends). Finally, the *personal component* of meaning in life is related to personal qualities and personality attributes (e.g., liking challenge, self-acceptance, or being open-minded). As we will see in the following chapters, each of these components and sources contribute uniquely to the experience of meaningfulness and mental health.

A construct closely related to sources of meaning is that of *personal values*. One of the most accepted definitions understands a personal value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p.5). Fegg et al. (2005) define values as "cognitive representations of goals or motivations that are important to people. They can be described as emotionally and cognitively

relevant principles guiding people's lives" (p.154). From a behavioral perspective, other scholars understand values as "verbally construed global desired life consequences" (Hayes et al., 1999, p.206). According to these definitions, personal values can be considered sources of meaning in life as they refer to what provides direction and value in one's life. Throughout this dissertation, both constructs are sometimes interchanged.

After a global collection of data from 97 samples in 44 countries, Schwartz (1994) distinguished ten basic values that motivate people cross-culturally: *power* (social status and prestige, control or dominance over people and resources), *achievement* (personal success through demonstrating competence according to social standards), *hedonism* (pleasure and sensuous gratification for oneself), *stimulation* (excitement, novelty, and challenge in life), *self-direction* (independent thought and action-choosing, creating, exploring), *universalism* (understanding, appreciation, tolerance, and protection for the welfare of all people and for nature), *benevolence* (preservation and enhancement of the welfare of people with whom one is in frequent personal contact), *tradition* (respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide), *conformity* (restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms), *security* (safety, harmony, and stability of society, of relationships, and of self). Ulterior studies, proceeding from up to 88 different countries, have provided additional evidence of the existence of these ten human values (Schwartz, 2012), even amplifying the number of them (Schwartz, 2017).

These apparently universal values can be grouped into four higher order values (Schwartz, 2012): *self-transcendence values* (they emphasize concern for the welfare and interests of others, such as universalism and benevolence), *self-enhancement values* (emphasizing pursuit of one's own interests and relative success and dominance over others, such as power and achievement), *conservation values* (emphasizing order, self-restriction, preservation of the past, and resistance to change, such as security, conformity, tradition), and *openness-to-change values* (emphasizing independence of thought, action, and feelings and readiness for change, such as self-direction and stimulation).

1.6. Objective facets of meaning in life

Based on the aforementioned considerations, it is feasible to assume that there are objective facets of meaning in life (Metz, 2013). Some facets of our lives are not

meaningful or worthy simply because we subjectively consider so; these facets may also contain some qualities in themselves that make us value them (Ortega y Gasset, 2004). According to Metz (2013), a life is not meaningful only because the person feels love, admiration, pride, or fulfilment. "Meaningful" essentially indicates *a life in response to which* these emotions would be suitable to appear; besides they are not manifested (Metz, 2013). A meaningful life therefore involves action, consequences in others or in the world, control, esteem, can be admirable for a third party and be considered meaningful even after the person's death (Metz, 2013).

Meaningfulness is also a gradient phenomenon; it is implausible to determine the exact point in which a life becomes meaningful or meaningless. A human's life is more meaningful the more the person employs their rationality either to positively orient toward fundamental conditions of human existence, or negatively orient toward what threatens them (Metz, 2013). Metz highlights three fundamental conditions responsible for providing meaning in life: the good, the true, and the beautiful (Metz, 2011, 2013). *The good* refers to moral achievement, sharing rationality with others, relating with others, and helping. *The true* represents knowledge about ourselves and nature, contemplation, and intellectual reflection about the facts surrounding us. *The beautiful* refers to aesthetic creation (e.g., making artwork in literature, painting, or music).

In recent years, there has been a consensus among psychology scholars about a tripartite model of meaning in life (Costin & Vignoles, 2020; George & Park, 2016; Heintzelman & King, 2014; Martela & Steger, 2016). According to this model, meaning in life comprises three main facets: coherence, purpose, and mattering/significance (Martela & Steger, 2016). *Coherence* is the cognitive component of meaning and reflects the degree to which a person makes sense and perceives understanding of their life (George & Park, 2016; Martela & Steger, 2016). *Purpose* refers to having direction in life and being motivated by future-oriented valued goals (Martela & Steger, 2016). The third facet, *mattering* or *significance*, represents the perception that one's life has worth, value, and importance in the world (George & Park, 2016; Martela & Steger, 2016). This tripartite model has recently begun to be empirically examined (Costin & Vignoles, 2020).

Wong (2012a) provided a model of meaning in life that includes three similar facets of meaning but adds a fourth behavioral component (responsible action). This model is called the "PURE model" and posits that meaning in life consists of an integration of purpose, understanding, responsible action, and enjoyment/evaluation.

Purpose is the motivational component of meaning, and it means to have goals, values, aspirations, and directions, to know what is important for one in life. *Understanding* is the cognitive component of the model and is related to find a sense of coherence, making sense of the situations, understanding one's own identity, other people, and the world. *Responsible action* is the moral and behavioral part of meaning; it represents the commitment through actions based on personal values, being responsible for doing what one believes is morally right. *Enjoyment/Evaluation* is the affective component; it means to assess the degree of satisfaction or dissatisfaction with the current situation and the life one is living. In line with Frankl's ideas, Wong assumes that the quest for meaning in life is the quest for self-transcendence, understood as the end value for seeking and serving something greater and beyond the self (Wong, 2014). Self-transcendence is probably the key aspect of mattering, and recent findings indicate that this is by far the greatest precursor of people's meaningfulness judgments (Costin & Vignoles, 2020). However, most previous empirical studies on meaning have paid their attention to the coherence and purpose components (George & Park, 2016).

It is worth noting the difference between facets of meaning and sources of meaning. Facets of meaning are defining features of meaning in life; the meaning of meaning in life. Instead, sources of meaning refer to the fundamental conditions that provide meaning in one's life. While we have mentioned several objective criteria of meaning facets, there is also a degree of objectivity in the sources of meaning. For instance, asking laypeople what provides meaning in their lives has yielded similar results in different cultures (e.g., Lin, 2001; Schnell, 2004, 2009; Takano & Wong, 2004; Wong, 1998). This cross-cultural similarity in the sources of meaning is also supported by Schwartz's (1994, 2012) research on human values. One possible explanation of why some areas and aspects of our lives are generally meaningful can be found in evolutionary theory (Baumeister, 1991; Klinger, 2012). For instance, human motivation for interpersonal attachments, which represent a major source of meaning in life (Wong, 1998), is adaptive and crucial for survival (Baumeister & Leary, 1995; Bowlby, 1969).

This rationale is not incompatible with assuming that a large part of the meaningfulness phenomenon is subjective (e.g., Steger et al., 2006). The experience of meaning in life has undoubtedly a subjective part; it is to a great extent personal. For instance, the rank and diversity of sources of meaning vary among people (e.g., Fegg et al., 2005; Schnell, 2011; Tomás-Sábado et al., 2015). Also, one's emotions can influence the sense of meaningfulness (King et al., 2006). However, despite this subjective aspect,

human beings are not exempt from the influence of their phylogeny and the context in which they live. The previous theoretical considerations and the systematic patterns identified cross-culturally regarding meaning in life and values support that certain objectivity in meaningfulness exists.

1.7. General aims

The present dissertation adopts the principles of existential positive psychology to understand three different populations' behavior and mental health. The general objective is to advance research on the role of meaning in life in the well-being of people with addiction, cancer patients, and university students. In these populations, particularly in addiction and cancer, the influence of meaning in life is quite visible. The dissertation addresses four basic levels of scientific study: 1) it makes a *theoretical review* of the phenomenon of meaningfulness and its contribution to the mental health of different populations, 2) presents the *adaptation and validation of two instruments* that measure meaning in life, 3) provides two *observational studies* that analyze the existing relationship between meaning in life and well-being, 4) describes an *experimental study* in which specific sources of meaning are manipulated to evaluate their effects on global meaning in life and well-being. These four research levels aim to respond to several questions related to the topic of meaning in life that remained understudied.

First, a theoretical re-conceptualization of the phenomenon of addiction will be presented. Our conceptualization of addiction challenges the predominant biomedical model and proposes a meaning-centered approach to understand and treat addiction. To support this approach, we will discuss the empirical evidence supporting the influence of personal relationships, guilt and responsibility, and meaning in life in the development and maintenance of addiction.

Second, we will present the adaptation of the Personal Meaning Profile-Brief (PMP-B, McDonald et al., 2012) to the Spanish-speaking population. This questionnaire measures meaning in life from a multidimensional perspective, including different sources of meaning. No instrument assessing standardized sources of meaning had been validated into Spanish before. The PMP-B was used in the following studies of the dissertation.

Third, we will describe a study among cancer patients that aims to evaluate the impact of the cancer diagnosis in the system of personal values and how this values shift was related to different aspects of quality of life. No prior study investigating in depth this phenomenon used a quantitative methodology with validated scores. Thus, we developed an instrument to measure perceived changes in personal values (Valued Living Questionnaire – Perceived Change, VLQ-PC; original version, Wilson et al., 2010).

Fourth, the last study of this thesis tested a novel meaning-centered intervention among university students. Based on the results found in previous studies and the present dissertation, the intervention was aimed to foster meaning in life through death awareness and prosociality in intimate relationships. Besides the theoretical link among these variables, no previous experimental study had explicitly combined these areas to promote meaning. We will present the impact of this intervention in personal values, valued living, personal growth, and psychological distress, among others. Quantitative and qualitative data are used.

Finally, we will discuss the relationship between death and meaning in life. On the one hand, we will make a brief proposal about how to live meaningfully at the end of life. On the other hand, we will argue about the use of death awareness to enhance meaning in life.

Chapter 2*

Meaning in life in addiction: From a critique of the brain disease model towards a meaning-centered approach

The problem of addiction has reached enormous proportions and is distributed across all strata of society. It is suggested that the percentage of US adults suffering from any form of addiction oscillates in between 15% and 61%, being highly plausible that around 47% of US adults manifest maladaptive signs of an addictive disorder over the period of a year (Sussman et al., 2011). Moreover, the track record of addiction treatment shows discouraging results: about 90% of people with addiction undergoing treatment experience relapse (Brandon et al., 2007) and many suffer from the revolving-door phenomenon and the false-hope syndrome. Beyond its classification as a disease -health issue-, addiction is also a societal, economic and spiritual issue. Addiction can psychologically impoverish and biologically kill the individual, hurt the family, and harm society (Wong et al., 2013).

In this work, we want to examine both the medical model and the existential approach to the complex phenomenon of addiction. Today's mainstream medical model of addiction locates the problem in a physiological disorder of the brain. This is why most research and clinical efforts are focused in this direction. We believe that, in the best of cases, the medical model offers a partial perspective of the phenomenon of addiction. Therefore, in this chapter we will first conceptualize addiction as a plural phenomenon after an epistemological critique of the medical model. Secondly, we discuss the underlying existential struggles discovered in people with addiction from the dialectical perspective of existential positive psychology (Wong, 2009), also labelled as PP2.0 (Wong, 2011a). Finally, we introduce the Meaning-Centered Approach (MCA) to

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addiction recovery which is aimed to help the client to cope with the existential challenges and find purpose in life.

2.1. An overview of the neurobiological approach to addiction

Addiction is widely considered to be a chronic brain disease, a dysfunction of the reward systems in which genetic vulnerability produces about half of the risk for its emergence and maintenance (American Psychiatric Association, 2017, American Psychological Association, 2018; Volkow et al., 2010). The results of hundreds of laboratory studies, mainly employing rodents and people with chronic drug addiction as test subjects, are used to support the argument for this biological understanding of addiction.

The neurobiological approach to addiction has benefited from enormous amounts of research funding and the interest of addiction researchers from STEM disciplines (Science, Technology, Engineering, and Mathematics). In the last few years, the middle and late stages of drug addiction have caught the eye of most neurobiologists and neuropharmacologists. Recent research has unveiled an ever-growing neurochemical unbalance in many and varied brain systems, and has led to the belief that the defining characteristics of addiction (and thus the key insights for potential treatments) are found in these stages (Koob & Volkow, 2010).

However, the early stages of addiction, the recreational use of drugs or activities like gambling, eating, and shopping (Holden, 2001) also play a key role in understanding the essence of addiction and preventing its development. The early stages of addiction involve the reward center of the brain (particularly, but not exclusively, dopaminergic projections from the ventral tegmental area to the nucleus accumbens) and the psychological mechanism of impulsive behavior. Addictive agents hijack the reward system of the brain, direct the individual towards natural reinforcers of "good" behaviors (Berridge & Robinson, 2003). Natural reinforcers, eclipsed by the addictive agents, progressively lose their ability to trigger normal responses in the reward system (Volkow et al., 2010). In addiction, the individual's willpower to resist drug consumption is diminished, as activity in cortical areas responsible for inhibitive control is decreased (Volkow et al., 2003), resulting in compulsive consumption instead of the impulsive consumption characteristic of the early phases of addiction.

Consolidated addiction in later stages is a complex phenotype characterized by compulsive and uncontrolled drug consumption, constant anticipation of drug use, and relapse when trying to quit consuming, contributing to a deadly positive feedback loop of ever-increasing severity of addiction. The person with addiction, unlike the recently initiated in drug consumption, does not consume for joy, but for relief from the pain of withdrawal. The allostasis model (Koob & Volkow, 2010) predicts progressive sensitization of stress systems through chronic drug consumption by vulnerable individuals, during transition and late phases of addiction. This sensitization is reflected in an increased activity of diverse systems mediated by the monoamine noradrenaline and several neuropeptides such as CRF, NPY, dynorphin, and substance P, among others. These long-lasting changes, termed "between-systems" neuroadaptations (Koob & Le Moal, 1997), occur as unadaptive counter-responses to chronic drug use, and are the base of a basal negative emotional state, increased and compulsive drug consumption, enhanced reactivity to stressors, and increased vulnerability to, and therefore likelihood of, relapse (Koob & Le Moal, 2001).

2.1.1. Pluralism

In this chapter, we commit to a pluralist approach to addiction. We do so after the careful consideration of two reasons. The first is that there is no privileged level of analysis of reality (and in extension, of addiction). The second is that, given the first, we feel allowed to advocate the use of a theoretical framework and techniques that yield desired practical outcomes. In our case, this means the justification of an existential, meaning-centered approach to addiction.

Due to the deeply rooted belief that "hard sciences" (neurobiology among them) are thought to provide more fundamental explanations than "soft" sciences (Campbell, 2005; Hedges, 1987; Platt, 1964; Storer, 1967; VanLandingham, 2014), neurobiological theories of addiction are the default and most prevalent accounts and resources for explaining and treating addiction. Mechanistic worldviews are rooted in modern scientific thinking and appear to be a very convincing way to earn credibility and public trust. It is for this reason that we feel that, before proposing an existential approach to addiction, we must shortly address the problem that reductionism, fundamentality and methodological purism pose.

First off, we reject the views that grant biology a privileged position in terms of fundamentality against psychological constructs (biological reductionism), or that straight away support the facticity of the former but denies the latter (eliminative materialism). It has been argued that all-encompassing theories, by being too general and unspecific, fail to be about anything real (Cartwright, 1983). This is what happens in addiction: a general biological theory of addiction fails to represent any person with addiction individually considered. For this reason, we advocate local methods of study, rather than all-encompassing generalization, and reject reductionist stances.

It could still be said that biology, as a science, is more rigorous than psychology, especially when intertwined with existentialist stances. However, we should put the rigor of biology in context. If the claim is made that the study of the biological substrata of addiction is the "most rigorous" way to study addiction, then we should be reminded that biological rigor and physical rigor are different (Keller, 2007) and, in addition, physical rigor and mathematical rigor differ too (Davey, 2003). What we mean is that, ultimately, each field has its own notion of rigor, and rigor should be understood within disciplines, and not between disciplines. Therefore, biologists should be concerned with doing good biology, and psychologists with doing good psychology, without relegating their discipline to a brain-centrist perspective in order to achieve recognition or be qualified as "rigorous". The inquire about rigor, in this scenario, must always be followed by the question "whose rigor?". For this reason, we advocate for the use of multiplicity of methods, without being restricted to a given notion of rigor.

All in all, we believe that there is no privileged level of analysis to which all else is to be reduced. For this reason, we consider that different approaches should be judged on their practical virtues rather than on their fit to a supposed fundamental truth, reality, purity or methodological rigor. Even more, we think different incommensurable approaches can coexist. One advantage of the pluralist approach is that different methodologies from different theoretical frameworks can be combined in order to shed light to complex and multifaceted phenomena, as is addiction. The other is that these approaches can be judged solely in terms of their practical consequences, of custom criteria of success. Later on, we will discuss the practical benefits of the existential approach to addiction. Feyerabend (1962) shows how phenomena admit several alternative theoretical descriptions equally compatible with them, but which feature different theoretical constructs. Regarding addiction, this means that it can be approached

from a biological perspective as well as from a non-materialist meaning-centered perspective.

This line of argumentation leads us directly to a need to redefine addiction itself. What kind of problem is addiction? The definitions of problems are always theory-laden, that is, there is no neutral description of a problem that is not itself part of a theoretical framework. Therefore, the very definition of the problems constrains how the problem will be dealt with. As such, if addiction is defined as a dysfunction of the brain, the focus of research, prevention, treatment and follow-up will be brain-related (and alternative approaches will be relevant inasmuch as they are linked to effects in the brain).

2.1.2. A disease to be medicated or a psychological problem to be resolved? The example of tobacco addiction

The rationale behind pharmacological treatments is that if addiction is better understood as a neurochemical dysfunction, then a direct intervention into the brain using medicines that modifies the neurochemical system implied may be the most effective solution. However, are the current pharmacological treatments more effective than psychological interventions? Let us consider the example of tobacco addiction treatment.

Among the most effective pharmacological treatments for smoking cessation is the use of varinicline, an α4β2 nicotinic acetylcholine receptor partial agonist. Among some of the most relevant studies is the one of Jorenby et al. (2006), who found that 23% of smokers subjected to a 12-week varinicline treatment were continously abstinent from smoking for weeks 9 to 52, compared with 10% in a placebo group and 15% of smokers subjected to buropropion SR treatment (another recommended pharmacological treatment). Knight et al. (2010) also found that 27.7% of patients under varenicline treatment remained abstinent after 1 year.

However, when compared with psychotherapy, pharmacological interventions have been shown to be less effective. For instance, Gifford et al. (2004) compared an acceptance-based treatment (ACT) with nicotine replacement treatment (NRT). A 1-year follow up showed that 35% of participants in the ACT condition quit smoking versus 15% in the NRT condition (see also, Gifford et al., 2011). In a similar study, Zernig et al. (2008) found that 39% of participants in a short psychotherapy group remained abstinent

after 1 year in comparison with 12% of participants in a bupropion SR group. The available literature shows that psychological interventions for smoking cessation can be more effective than pharmacological treatments. According to this evidence, tobacco addiction can be better considered as a psychological problem to treat rather than a chronic brain disease to palliate with medicines.

Although psychological interventions have a relatively moderate higher effectiveness than pharmacological ones in tobacco addiction, there is a by far stronger predictor of smoking cessation: the diagnosis of a smoking-related disease. According to an epidemiologic study by Twardella et al. (2006) with 4,575 individuals, the relative cessation rates in a year after diagnosis were 11.2 for myocardial infarction, 7.2 for stroke, 2.5 for diabetes mellitus, and 4.8 for cancer in comparison to years before diagnosis, suggesting that when smokers experience the health consequences of smoking, a high amount of them quit. Park et al. (2012) found that 63% of patients with lung cancer who had been smoking around the time of diagnosis had quit by 5 months after such. Among the factors associated with continued smoking were being unmarried, reporting higher level of depression, and reporting less emotional support. Cooley et al. (2009) showed that 50% of smokers were able to quit and not relapse into smoking during 4 months after lung cancer surgery. In this study, only 46% of patients received smoking cessation treatment. Other studies have shown higher than 80% rate of smoking cessation after one year of lung cancer diagnosis (Dresler et al., 1996; Gritz et al., 1991).

Taken together, the smoking cessation rates mentioned above show that the diagnosis of smoking-related diseases like lung cancer produce a clearly higher smoking cessation rate than either the actual pharmacological or psychological treatments. What could be the factors behind this phenomenon? Below, we argue that existential struggles related to meaning in life, self, guilt, responsibility, and relationships with others and society better account for the development and maintenance of addiction. These existential challenges, including the motivation for survival, surface after the diagnosis of life-threatening illnesses and have been generally ignored or underestimated in traditional treatments for addiction.

2.1.3. The status of the neurobiological approach to addiction and a reconceptualization of the problem

As we justified before, it is important to evaluate the virtue of each approach in regards also to their practical consequences. We see that the neurobiological one falls short of dealing with the problems it purports to solve, and hence, we will reframe the problem pluralistically.

The allostasis model of addiction mentioned earlier, and other neurobiological theories of addiction, have been quite successful in laboratory conditions, having achieved considerable internal and face validity, predictive power, and having provided a useful theoretical framework for neuroscientists to follow. However, their external validity is not on par, and for this reason, they do not escape from the anti-reductionist critique that addiction should not be (only) considered as a biological phenomenon. Consider, for example, the classical study by Bruce Alexander (Alexander et al., 1981; Alexander et al., 1978): rats in an enriched environment (Rat Park) did not display many of the behaviors characteristic of addiction, while they did when confined in cages resembling the environment in which rats employed in addiction experiments inhabited. Rat Park, unlike experimental cages, was a large surface full of toys and stimulation where communities of rats lived together and could engage in social behavior and mating. Alexander claimed after these results that animal self-administration studies yielded little to no insight on drug addiction. If anything, they were evidence that animals in isolation and deprived from rich contexts and natural reinforcers turned to drug consumption. He called the mainstream conception of addiction with an emphasis on the drug and its effects on the brain the "Myth of the Demon Drug" and this conception is still the most popular to this day. Furthermore, it has been noted how most soldiers who consumed heroin during the Vietnam War did not suffer from heroin addiction upon return to their homes and instead ceased heroine consumption (Robins, 1993). The soldiers, who engaged in heroine consumption because of its anaesthetic properties but also because of the extreme difficulties of the war, did not feel an urge to consume when surrounded by their relatives and friends in a healthy and prosperous context.

Even more, an emphasis on the biological aspect of addiction may have the effect of depriving individuals with addiction of a sense of agency that might otherwise lead them to implement meaningful changes in their lives in the aforementioned manner: "after all, it is a biological problem only, and therefore there is nothing I can do about it".

As we see, the neurobiological approach does not seem to be telling the whole story. Its overgenerality and all-encompassing ambitious stance is precisely what makes it blind to aspects that are incommensurable with its framework. But treatment is not the only weak point of the neurobiological approach: it also faults at prevention. The neurobiological approach often explains why some individuals but not others develop addiction in terms of their biological characteristics. The picture of "vulnerable individual" depicted is a shady one: it is proposed that vulnerable individuals have been unlucky in the genetic lottery, and have a natural predisposition towards addictive behavior. However, these genetic vulnerabilities are seldom specified in actual individuals with addiction, and when they are, it is done either in laboratory animals in poorly representative conditions (a method which further promotes blindness towards existential factors), or post hoc in humans (on people that haven addiction already), which throws away the very purpose of prevention and furthermore casts doubt on the causal direction. On top of that, even if specific genetic markers were identified as being directly and causally related to addiction, gene manipulation would pose challenges in multiple fronts (not only technically, but also, for instance, ethically). Therefore, genetic vulnerabilities are often taken for granted, studied in animals in artificial laboratory conditions or post hoc in people with addiction, and leave no real room for preventive measures. Worst of all, and similarly to the above paragraph on treatment, this discourse can have the deleterious effect of masking or discrediting alternative etiological hypotheses and preventive measures.

All in all, both treatment and prevention are flawed in the practical sphere of things. And yet, the neurobiological approach to addiction holds sway. This is difficult to justify given that, as we will see, there are alternative frameworks that offer manners to document which individuals are at risk, provide convenient preventive and treatment solutions, yield a more holistic approach to the person with addiction and addictive behavior, and in general, contribute to filling the blind spots that the neurobiological paradigm leaves behind. And indeed, there is space for alternative frameworks: the partial success that mainstream psychology has already achieved in this regard speaks for itself (although it remains for the most part relegated to brain-centrism). It is imperative to go further in this direction, depart from brain-centrism and arrive to a properly pluralist position. Here it is where the meaning-centered approach comes into play.

Addiction is as much of a biological phenomenon as it is a psychological, social, legal, anthropological, and as we will argue, even an existential phenomenon. From this

perspective it should be establish whether addiction is a neurochemical unbalance, a disconnection from other reinforcements prompted by social exclusion, a coping strategy by individuals who have failed to find a meaningful life, or rather, a combination of these problems. We should also reformulate concepts such as "vulnerable individual", which for the neurobiological approach means "someone with genetic predisposition towards addiction", also as "someone repressed by social taboo and excluded from long-term bonds and life satisfaction", or "someone lacking the basic skills to cope with the horrors of life".

The neurobiological approach, in spite of having extensively documented the effect on the brain of natural reinforcers (Kelley & Berridge, 2002; Noori et al., 2016; Olsen, 2011) does not take them into account for the explanation of the onset of addiction or for its therapy, or in the best of cases, vastly downplay them. It has been proved how access to non-drug rewards like sugar and saccharin have a protective effect against cocaine and heroin consumption in laboratory animals (Carroll et al., 1999; Lenoir & Ahmed, 2008), which is reminiscent of Alexander's Rat Park environment effect. Therefore, these reinforcements cannot be taken out of the equation: people with addiction often rejoice in drug consumption due to rejection and seclusion, which privates them from natural reinforcements, but also from meaning in life. Human's symbolic worlds are complex, and a healthy existential stance might offer this kind of protection at a much higher degree. It is also for this reason that rebuilding the world of the person with addiction cannot just be an afterthought in the treatment, but a priority.

In Aldous Huxley's (1932) *Brave New World*, all citizens consumed soma, a drug that provided them with constant gratification, soothing of discomfort, and dissipation of any motivation to change society, rules, or the situation in general, eventually hollowing it out of meaning. Would a substitute pharmacological treatment improve things much? By using this analogy, one can see how incomplete the pharmacological approach is in order to treat addiction and the shattered worlds it creates. The biological aspect of addiction is actually much smaller than it is given credit for.

2.2. A clinical conception of addiction

We must clarify then the concept of addiction we use throughout this chapter. Addiction cannot be considered exclusively in terms of physical dependence, withdrawal, tolerance and quantity of consumption of a substance, or time devoted to a particular activity. For example, many people can use high doses of a substance during many years, being very tolerant with the effects of the drug, and still not present a psychological problem. One can freely choose a regular use of caffeine or cocaine, being aware of the consequences, because it gives one the enough energy to do a loved job, or consuming sporadically marihuana because it makes one thinks more creatively (e.g., some brokers in Wall Street or entrepreneurs in Sillicon Valley). Drugs have been used practically from the beginning of human existence and they are not a problem themselves (Courtwright, 2001; Escohotado, 1999).

However, addiction implies a clinically significant impairment or distress. Substance use disorders and other addictive disorders present physical, psychological, and/or interpersonal problems as a consequence of the substance use or activity the person is addicted to (American Psychiatric Association, 2013). Addiction affects drastically the quality of life of the addict and creates a strong disconnection between who one wants to be and who one really is. Besides, addiction disorders often present withdrawal (such as anxiety, irritability, restlessness, and sleep problems) in the absence of a given substance or activity and unsuccessful attempts to cut it down (American Psychological Association, 2018). When we speak of addiction or an addict in this chapter, we refer to this clinical picture.

2.3. An existential perspective of addiction

What is the existential perspective? Wong (2017) provides this definition:

> Existentialism is concerned with the inescapable aspects of human existence and addresses the recurrent questions of human struggles: What am I doing here? What is the point of striving toward a goal, when death is the inevitable end? How can I live a worthwhile life? How can one find happiness in a world full of suffering? Because clients may raise existential concerns during counseling, implicitly or explicitly, psychotherapists, regardless of their therapeutic modality, need to be

> prepared to address these concerns. Unlike other approaches to psychology and psychotherapy, the existential perspective focuses on the role of meaning as a pathway to survive and thrive in a chaotic and meaningless world. (p. 1374)

For thousands of years, human beings have been aware of their existence, asking and answering these questions about themselves and the meaning of their lives. We know that psychological well-being and happiness depend to a great extent on having solved these questions properly. But, while many people have developed a coherent and worthy sense of themselves, linking their past, present, and future in a meaningful way so that they feel connected to others (no matter whether they are close to people, society, animals, or God), to what really matters in life for them, other people have not developed an adequate existential framework to protect and sustain them in times of personal crises.

People with addiction generally appear to live in a serious struggle with existential challenges (Ford, 1996; Wiklund, 2008a). For example, perceiving oneself as alienated from the self and others has been described as a motive for drug use (e.g., Boyd & Mackey, 2000). Addiction has been also considered as a mechanism to escape from suffering and traumatic experiences (e.g., Nehls & Sallmann, 2005; Zakrzewski & Hector, 2004). According to a qualitative study by Wiklund (2008b), addiction can be understood as a spiritual striving that is caused by a person's suffering, presenting conflicts such as meaninglessness, loneliness, death, guilt, and loss of control. Other authors have explained addiction like a narrow hedonistic way of existence (Kemp, 2011), one of the outcomes of existential vacuum (Frankl, 1988; Wong et al., 2013) and societal malaise (Alexander, 2001).

2.3.1. The dialectical perspective of PP2.0

However, addition cannot be exclusively approached either as a maladaptive seek of hedonism or as an artificial scape of suffering and existential despair. Similar to the neurophysiological theory of reinforcement which is based on the notion that addictive behaviors are positively reinforce via stimulation of reward systems but also negatively reinforced via compensation of the activity of stress systems, the psychological study of addiction requires a more integrative approach that includes these two self-regulation systems: the pursue of the positive and the avoidance of the negative. Wong's Dual-

Systems model gives an account of this self-regulation duality in depth (Wong, 2012a). According to this model:

> "the approach and avoidance systems coexist and operate in an interdependent fashion. The approach system represents appetitive behaviors, positive affects, goal striving, and intrinsic motivations. The avoidance system represents defensive mechanisms against noxious condition, threats, and negative emotions. Both systems need to interact with each other in order to optimize positive outcomes". (Wong, 2012a, pp. 6 and 7)

Wong claims that an adaptive interaction of these two motivational systems is necessary to have an optimal life. For example, whereas positivity is determinately linked to subjective well-being, certain levels of negativity can be useful to develop resilience (Wong, 2012a).

In the next sections we offer a conceptualization of addiction under this existential positive perspective. Addiction can be interpreted as a maladaptive response to the existential challenges from both the positive and the negative self-regulation systems.

2.3.2. Relational problems in addiction

Many of the existential struggles in addiction are collected in the following testimony (not published) of a person involved in drug addiction during his adolescence:

> My drug addiction began after being rejected by the girl I had fallen in love with. By that time, I was changing my group of friends since the previous one did not convince me at all. The majority of my new friends were addicted to tobacco, and cannabis, drank a lot of alcohol during the weekend, and used quite often hard drugs like cocaine or ecstasy. Although they were seen as a conflictive group in my town, for me they were just different, good people rejected by a classist society. Many of them had dysfunctional families like mine... The freedom I got in my new role, the intense emotions I was experiencing were everything for me…I was overcoming my fears, breaking down limits. I even challenged authorities quite often. Being 'the worst' of the group made me feel good, a

> leader… Many of the times I got high I had the courage to get closer to that girl, expressing my love for her, always received with ambivalence or rejection. The relation with my mother became worse and worse, my dream of enrolling at university was vanishing, and the chance of dating that girl was practically null. I was falling behind the rest of people, distancing from myself...Those friends were not the good friends I had imagined.

In the above case, we can see that the adolescent is striving to find people with whom he could feel connected and supported. This relational deficit has been generally found in people with addiction. For example, Hardie and Tee (2007) found that internet over-users and addicts are characterized by being less extrovert as well as more socially anxious and emotionally lonely than normal internet users. Mothers with alcohol and other drugs addiction reported aversive childhood experiences related to parenting stress, display of problematic parenting behaviors, and lower levels of social support (Harmer et al., 1999). Other studies have also evidenced that drug addicts exhibit lower perceived social support than those who do not use drugs (Dodge & Potocky-Tripodi, 2001). Indeed, authors such as Kemp and Butler (2014) have even suggested that at the heart of addiction are the issues of love and hate. According to these authors, the person with addiction seeks love but finds hate from others.

The problematic dual function of addiction in relationships is that, on the one hand, it can serve as the means to seek connection with others, and on the other hand, it can be the means to numb the pain of rejection or social isolation. Firstly, the inhibitory effect of many drugs (like alcohol or many opioids) can be a vehicle to create emotional links with others by removing shame and facilitating emotional expression. Gambling and internet surfing can work also as a means through which find social interaction. Secondly, in social isolation, the absence of the rich amalgam of stimulation and emotions naturally produced by social reinforces may lead to substance abuse or excessive indulgence in addictive activities. In this situation, the object of addiction could be a poor "artificial" source of reinforcement that cannot be otherwise naturally obtained from social life. Thirdly, in the case of having negative experiences such as abuse or rejection from other people like family, friends, classmates, either before developing the addiction or as a consequence of it, the person with addiction can use the substance or activity as a short-term way to escape from suffering.

When one's life is full of attacks and snubs from others, one will likely develop a sense of oneself a black sheep, an outcast, someone inferior to the surrounding people. Addiction can be a mechanism to temporally relief such painful feelings. Taking into account that people with addiction often find rejection by society as well, as they can be considered to be irresponsible losers or deviant and mad (Kemp & Butler, 2014), addictive behaviors can be the pathological result of dissatisfaction with or rejection of the self (Das, 1998). Therefore, love and empathy should be two of the central healing features in addiction recovery (Kemp & Butler, 2014).

The proposal of a healing community for addiction recovery has been emphasized by different institutions and authors such as Alcoholics Anonymous (1939/1990), Peck (1978), Picucci (1996), and Wong (2011b). Being member of a group of people including professionals and clients with addiction which promotes an environment of acceptance, care, and trust, provides many opportunities to experience psychosocial integration and learn new social skills.

2.3.3. Guilt and responsibility in addiction

The disease concept of alcoholism, initially supported by Alcoholics Anonymous in the 1930s, had the original purpose of improving the public image of people with alcoholism, suggesting that the problem behind this addiction was not weakness of will in their addictive behavior, but an underlying physical illness (Ford, 1996; Room, 1972). This disease analogy over time became the *de facto* explanation of addiction, confining people with alcoholism within a victim role and reducing or even altogether removing their sense of guilt and freedom of choice about their drug use (Robinson, 1972). Today, although the influence of psychosocial factors has been recognised, the disease model remains the major explanation of substance addiction (e.g., American Psychiatric Association, 2017).

However, the removal of a sense of guilt and responsibility about addiction can be a double-edged sword. On one hand, reducing the guilt about addictive behavior can help one by preserving up to a point a sense of will, worthiness and control. But, on other hand, it can be a scapegoat from taking responsibility about one's misbehavior that perpetuates addiction. Guilt is a signal that one's behavior is inconsistent with one's values (Ford, 1996). In the words of Ford:

> [People with addiction] frequently become depressed and hopeless in response to their guilt—they tell themselves that they could never hope to correct the wrongs that they have done to others or make up for the years that they have wasted, so it is not worth attempting to do so. Also, they believe that their past misbehaviour indicates that they are just "bad" by nature. This preoccupation with guilt often serves to impede the process of change. (p.155)

We assume that regardless whether humans are determined or not by their facticity (the physical, biological, social, and cultural conditions in which they were born and live), they are also condemned to be free (Sartre, 1956). Modern western societies, influenced mainly by the predominant deterministic discourse of science, normally explain human behavior through factors such as biology, emotions, cognitions, social context, etc. Most of these explanations encourage an external locus of control and often underestimate the potential of an individual to make free decisions. For example, we learn that one "has depression" because of a neurochemical dysfunction, a lack of positive stimuli, a low self-esteem, a traumatic experience, or a relational deficit. Whatever the reason, they are rarely considered as a consequence of free choices (active or passive) made by a person. However, even in situations of high levels of suffering, there is always some degree of freedom in the attitude we adopt toward that suffering (Frankl, 1984).

This act of *bad faith*, in terms of Sartre, running away from the degree of freedom we have as human beings, is very present in addiction. People with addiction tend to show an external locus of control (e.g., Drew, 1986; İskender & Akin, 2010; Sheffer et al., 2012). They normally consider their addiction to be superior to their willpower, and that hence they cannot stop it. And, although some people feel that they have control of their addictive behavior, they always postpone its interruption.

This external locus of control usually accompanies negative feelings such as guilt, misery, impotence, and despair about their perceived inability (Ford, 1996). Such feelings surface even more when there is a failure to cut the addiction down. Relapses can bring more doubt about making a positive life change and submerge those with addiction deeper and deeper inside a dark place. The more problematic the life into which one has introduced oneself is, the more difficult assuming responsibility about it is. If one assumes that drug consumption can be interrupted in the present, one could also assume that its cessation was possible in earlier stages, which can create a feeling of guilt about the past.

Treatments should not be exclusively focused either on the reduction of the addictive behavior like traditional psychological treatments, or on cultivating more positive emotions that replace the object of addiction as proposed by the first wave of positive psychology treatments (see Krentzman, 2013). In line with PP2.0 (Wong, 2011a), deepening one's self-understanding and learning how to deal with the dark side of human existence, in which we often observe feelings of guilt, misery, and inability, should be an imperative of psychological programs for addiction. It is necessary to help people with addictions forgive themselves for their "bad" past and taking it with acceptance, while encouraging responsibility for present and future decisions and choices. Therapies such as Logotherapy (Frankl, 1984) and Meaning-Centered Therapy (Wong, 2012c) restore the human freedom of will and the imperative of personal responsibility, accepting difficulties as a strong motivation for transformation. Research has shown that responsibility and a sense of coherence are important for addiction recovery (Feigin & Sapir, 2005).

2.3.4. Meaninglessness in life in addiction

We speak of meaninglessness in life when the core existential questions about one's life (Wong, 2017) are not solved; when one does not have a clear purpose and motivation in life; when one is disconnected from others, society, or an ultimate purpose (let us call it humanity, nature, universe, God or whatever that is beyond the self); when there is a huge inconsistency between who one would like to be and who one really is (or perceives oneself to be); when there is a feeling that one's life is not worth living. Addiction has been suggested to be the outcome of this existential vacuum, a lack of meaning in life (Frankl, 1988; Wong et al., 2013).

Apart from substance use or engaging in addictive activities, people with addiction seem to live deprived from a clear sense of meaning and purpose in life (e.g., Didelot et al., 2012; Johnson et al., 1987). There is a need for them to create a new interpretation of their world, to experience coherence in life, to restore dignity as well as a sense of community and attachment (Wiklund, 2008b). For people with addiction, terms like "boring", "dull", "awful", and "trapped" are common (Kemp, 2011). Daily life of people with addiction is usually repetitive, and they exhibit some of the following features:(a) withdrawal from the world, (b) very little contact with others, (c) low physical

activity, (d) excessive hedonism and leisure activities like TV watching, and (e) monotony. The lived space is often reduced to their homes. In this sense, people with addiction seem to be living in an inner fantasy world (Kemp, 2011).

There is also a dialectic function of addiction from a meaning perspective. Addiction may not only be the consequence of a hedonistic life (seeking constant short-term stimulation), it can be also a way to escape from the responsibility and commitment that a meaningful prosocial life requires. Actions based on personal values and self-transcendence often demand coping with suffering. Defending a hedonistic *carpe diem* attitude in life, as if there was no tomorrow, can be motivated by the evasion of responsibility for the consequences of the present actions.

A hedonist orientation, a change of moral norms, and overabundance in a society can produce existential vacuum (Frankl, 1988). These three factors are very much present in worldwide societies today. A predominance of short-term stimulation over long-term goals prevents people from living a life with deep meaning and fulfillment. The epidemic of addiction and the accompanying psychological and societal problems are some of the outcomes of this hedonistic lifestyle in an excessively materialistic and individualistic affluent society. According to Frankl (1986), "The feeling of meaninglessness…underlies the mass neurotic triad of today, i.e., depression-addiction-aggression" (p. 298).

However, when a life-threating illness is diagnosed, that worldview, lifestyle and evasion of responsibility are challenged. Death awareness often results in the cessation of consumption, the stop of this passive style of living, and the search for a more meaningful and prosocial life. The problem is that sometimes it is too late to recover from the physical damage produced, and it eventually leads to death. Treatments for addiction should develop techniques that produce a similar existential awareness and the commitment with an addiction-free meaningful life.

2.4. The Meaning-Centered Approach to addiction recovery

Previous studies have corroborated the efficacy of introducing the existential aspect of meaning in life in treating addiction. For instance, Chen (2006) observed that the integration of spirituality with social support in a 12-step program for addiction recovery produces a higher sense of coherence and meaning in life, together with a reduction in the intensity of negative emotions in comparison with exclusively social support

interventions. Other proposals of incorporating meaning in life elements in treatment for addiction and its efficacy can be seen in Gifford et al. (2004, 2011), Krentzman (2013), and Somov (2007).

Throughout the text, we have argued based on evidence that an effective treatment for addiction should address the existential struggles of the client (like social isolation and relational problems, evasion of responsibility, and meaninglessness in life) while paying special attention not only to the positive motivation that lead people to use drugs or to repeat the activity they are addicted to, but also to the negative reinforcement that addiction produces such as its power to relief social rejection and traumas, escape from existential despair, guilt and responsibility. We believe that one umbrella for treating addiction that covers these important issues is the Meaning-Centered Approach (MCA; Wong, 2011b; Wong et al., 2013).

MCA or Meaning-Centered Therapy (MCT) is rooted in existential positive psychology (Wong, 2010b) or PP2.0 (Wong, 2011a). While considering the positive aspects of human functioning (such as positive affect, personal strengths, flow, engagement and purpose) derived from the first wave of positive psychology (Seligman & Csikszentmihalyi, 2000), PP2.0 emphasizes the potential benefit of negative factors and suffering in life for optimal functioning and personal growth. PP2.0 highlights the dynamic interplay between the bright side and the dark side of life for human flourishing.

Derived from the principles of Frankl's logotherapy (Frankl, 1984), at the heart of MCA there is the focus on meaning in life and the centrality of spiritual needs to human flourishing (Wong, 2011b). Thus, the MCA for treating addiction does not only include goals of recovery from addiction but also seeks a restoration to fullness of life and reintegration into society. The aim is to help the client to discover and choose a mission in life, awaking his will to meaning and his capacity for freedom and responsibility. The problem of addiction is not the drug use or the addictive activity, but the person who keeps doing such actions until destroying his life. According to this perspective, although complete abstinence may be the consequence of complete life restoration, it is not necessary for it (Wong, 2011b).

In summary, MCA has the following characteristics (Wong, 2011b, Wong et al., 2013):

1. Holistic: From a bio-psycho-social-spiritual model, it treats the whole person rather than only addiction as a disease.

2. Integrative and comprehensive: It can complement other evidence-based addiction treatments. It makes use of all available resources to achieve treatment goals.
3. Meaning-centered: Addiction is understood as the symptom of existential vacuum, therefore, its helps clients to cope with the existential and spiritual challenges.
4. Relational: The therapist is the most important instrument in therapy. Relationship with the client is an authentic here-and-now encounter that reaches a deep level of intimacy, empathy and trust.
5. Community-oriented: MCA includes a healing community in which people with addiction can feel socially integrated and learn new ways of relating and coming together.
6. Psycho-educational: An important part of the treatment is to teach clients the underlying factors related to their addiction and the need for learning more adaptive coping skills.
7. Optimistic: Although it recognizes the darkness of reality, it uses the concept of tragic optimism (Frankl, 1984) to make clients believe that no matter the circumstances, we can keep hope.

The ambivalence between being sober versus remaining a person with addiction stems from the fact that the gains of leading a drug-free life are not strong enough to compete with the intense pleasures of being high (Wong, 2011b). In fact, during recovery, many people with addiction still experience a void in their lives, which initially drove them to addiction. Since the effects of a substance or an addictive activity have been normally the major source of reinforcement (positive and negative) in the person's life, its removal must be necessarily supplied with other powerful reinforcer. The goal of MCA is not only the abstinence from addiction, but also the switching from a shallow hedonist existence into a deeper and more fulfilling meaningful life.

MCA helps clients with addiction restore meaning and passion for living under the framework of the PURE model (Wong, 2012a). Based on these principles for meaningful living, MCA for addiction uses different techniques such as the ABCDE strategy (Accept reality, Believe that life is worth living, Commit to goals, Discover the meaning, Evaluate and Enjoy the outcomes) for overcoming negativity and coping with the suffering associated with addiction recovery. Other strategies like Wong's 5 steps

(acceptance, affirmation, courage, faith and self-transcendence) are used to restore hope during a relapse or a period of depression (see Wong, 2011b, Wong et al., 2013).

Thus far, MCA is a theoretical proposal to approach addiction, based on the limitations of mainstream models and the evidence collected in the literature regarding the relationship between addiction, interpersonal problems, lack of responsibility, and meaninglessness. However, MCA must still be empirically tested via protocolized interventions. We hope that this chapter serves to draw attention to future experimental studies in this direction.

2.5. Conclusions

Addiction is widely considered to be a chronic brain disease. Research over the last decades has been heavily focused on laboratory studies addressing neurochemical dysfunctions in rodents and people with chronic addiction. Convinced of the fundamentally biological character of addiction, neuroscientists have strived to develop mostly pharmacological treatments to palliate addictive behavior. However, the brain disease model has failed to yield a rich and successful account of the complex phenomenon of addiction. Some of the weaknesses of the neurobiological model of addiction are poor external validity of laboratory studies (which fail to account for elements present in natural contexts), the assumption of genetic vulnerabilities and how it impairs prevention measures, and the low efficacy of pharmacological treatments in practice, among others. The neurobiological model can be contested in both epistemological and methodological grounds by criticizing the fundamentality of any level or approach over others and the confinement to a restricted set of methods that supposedly captures such fundamentality. We believe that a pluralist approach to addiction which is more concerned about practical results than ideals of fundamentality, purity and "good science" is a more suitable approach to understand and treat this societal, economic and spiritual problem.

From a holistic perspective we observe that people with addiction often present existential struggles that could account for the development and maintenance of addiction. Addiction can be interpreted as a narrow hedonistic way of existence (Kemp, 2011), one of the outcomes of existential vacuum (Frankl, 1988; Wong et al., 2013) and societal malaise (Alexander, 2001). Existential positive psychology (PP2.0) provides a

pluralistic framework of addiction that can explain the underlying maladaptive self-regulation when coping with the existential challenges. Based on the evidence at hand, we firstly discussed the existential struggle related to the social disconnection experienced by this population. In line with the dual-systems model (Wong, 2012a), substance abuse and activities like gambling, eating, and shopping, can be a means to seek human connection, an artificial substitute of emotional stimulation that cannot be naturally obtained from social interaction, or a means to numb the pain of rejection and interpersonal traumas.

Secondly, another underlying existential struggle in addiction is the evasion of guilt and responsibility. The message that the problem behind addiction is not weakness of will but an underlying physical illness can be a double-edged sword. Although it can preserve certain sense of will and worth of the person with addiction, it can also be a mechanism to scape from taking responsibility about the own misbehavior that in turn perpetuates addiction. One may blame one's genes, environment, relatives, or call it a disease. One may rightly confess one's utter helplessness to get over the addiction. But ultimately, one still holds the key to recovery.

This lack of responsibility is also linked to a lack of meaning and purpose in life (e.g., Didelot et al., 2012; Johnson et al., 1987). Following a meaningful prosocial life requires coping with suffering and taking responsibility of personal actions, but over time fewer people accept this life style. The existential crisis is frequent in modern societies characterized by a hedonistic-sedentary style of living, materialistic, individualistic, with increasing depersonalization and dehumanization due to global competition. Addiction is just one of the outcomes of this existential vacuum.

We finally proposed MCA for addiction recovery (Wong, 2011b; Wong et al., 2013). Rooted in PP2.0, MCA intends to help clients with the existential struggles behind their addiction like social isolation, traumas, rejection, guilt, evasion of responsibility and lack of purpose in life. Its ultimate objectives are the realization of clients' full potential, full integration into society, and the restoration of purpose and passion for living. Thus, MCA is characterized for being holistic, integrative, meaning-centered, relational, community oriented, psycho-educational and optimistic. Because of this existential pluralistic emphasis, MCA can be an essential complement for mainstream addiction treatments. Beating addiction is hard, especially when it becomes chronic. However, in the final analysis, addiction is an existential, spiritual problem.

Chapter 3*

Study 1.
Spanish adaptation of the Personal Meaning Profile-Brief: Meaning in life, psychological well-being, and distress

Before carrying out the empirical studies included in this dissertation, we needed to have available an instrument that measured meaning in life from a multidimensional perspective, including sources of meaning in life. We found no instrument validated into Spanish with a standardized assessment of sources of meaning. For that purpose, we chose an empirically founded questionnaire by Wong (1998). Wong (1998) studied the implicit theories of people about what constitutes a meaningful life. After content analysis of participants' responses and other methodological procedures, the Personal Meaning Profile (PMP; Wong, 1998) was developed. Later, McDonald et al. (2012) created a brief version of this questionnaire, the Personal Meaning Profile-Brief (PMP-B). The PMP assesses meaning in life through seven major sources: relationship (having friends and being liked and trusted by others), intimacy (mutually satisfying family and intimate relationships), achievement (striving for and attaining significant life goals), self-acceptance (accepting personal limitations and suffering), self-transcendence (contributing to society), fair treatment (perceiving fairness from society and life), and religion (seeking to please God).

Validity evidence of the original PMP has been extensively collected (Jaarsma et al., 2007; McDonald et al., 2012; Testoni et al., 2018). Although its brief version (PMP-B) has been less used, it is more practical for the clinical field, as the few existing questionnaires that assess sources of meaning require a relatively long time to be filled in (e.g., Sources of Meaning and Meaning in Life Questionnaire, SoMe; Schnell, 2009). The

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PMP-B scores have been positively associated with satisfaction with life, positive affect (Brouzos et al., 2016), psychological well-being (Brouzos et al., 2016; Demirbaş-Çelik, 2018), and negatively associated with depressive symptoms, posttraumatic stress (Krumrei-Mancuso, 2017), and negative affect (Brouzos et al., 2016).

Despite its generalized use in the field, none of the two formats of the PMP had been translated into Spanish. For the first time, we adapted the PMP-B to the Spanish-speaking population. Of note, there are more than 40 meaning measures in English (Brandstätter et al., 2012), but only a handful with validated scores in Spanish. Among them, only the Schedule for Meaning in Life Evaluation (SMiLE; Monforte-Royo et al., 2011) includes sources of meaning. The SMiLE is a respondent-generated instrument aimed to provide an individualized assessment of meaning in life. One possible limitation of this questionnaire is that many people may not be conscious of their sources of meaning and need additional support to articulate them. Moreover, the SMiLE is focused on the global score, and its format makes it difficult to assess distinct sources of meaning as compared to the PMP-B.

The objective of this study was to investigate the psychometric properties of the Spanish version of the PMP-B (factor structure, measurement invariance, internal consistency, test-rest reliability, and relations with other variables). For that purpose, we recruited a community sample and university students, and tested the following hypotheses:

H1. Older people would show higher PMP-B scores than younger people. Previous studies indicate that meaning in life increases across the lifespan (Schnell, 2009; Steger et al., 2009).

H2. The PMP-B scores would be positively related to psychological well-being, particularly with the purpose in life dimension.

H3. The PMP-B scores would be negatively associated with psychological distress, especially with depression (Disabato et al., 2017; Krumrei-Mancuso, 2017; Steger et al., 2006).

H4. Relational sources of meaning (relationship, intimacy, fair treatment, and self-transcendence) would be the sources that most predict purpose in life, psychological well-being, and distress.

3.1. Method

3.1.1. Participants

A total of 546 participants comprised of three groups volunteered in this study. Sample 1 was 171 participants from a Spanish community sample. Sample 2 included 295 undergraduate students from different Spanish regions and academic disciplines. Descriptive data of Sample 1 and Sample 2 are presented in Table 1. Sample 3 included 80 psychology students from the University of Almeria, with 82.5 % females, ranging from 19-54 years (M = 22.67, SD = 6.61), and it was used for the test-retest reliability analysis.

Table 1. Sociodemographic characteristics of Sample 1 and Sample 2 in Study 1.

Variables	**Sample 1. Community sample**	**Sample 2. University students**
N	171	295
Female (%)	103 (60.23)	193 (65.42)
Mean age (*SD*)	48.77 (12.99)	22.78 (4.56)
Range	19-78	18-54
Region (%)		
Murcia	105 (61.40)	106 (35.93)
Andalucía	66 (38.60)	80 (27.12)
Almería	66 (38.60)	59 (20.00)
Madrid	-	39 (13.22)
País Vasco	-	20 (6.78)
Valencia	-	16 (5.42)
Others	-	34 (11.53)
Education (%)		
No studies-Primary	42 (24.56)	n/a
Secondary Education	77 (45.03)	n/a
University degree	47 (27.49)	n/a
Academic discipline (%)		
Social Sciences & Law	n/a	132 (44.75)
Health Sciences	n/a	103 (34.92)
Technological Sciences	n/a	26 (8.81)
Sciences	n/a	17 (5.76)
Arts & Humanities	n/a	17 (5.76)
Socioeconomic level (%)		
Low	11 (6.43)	n/a
Medium-low	36 (21.05)	n/a
Medium	91 (53.22)	n/a
Medium-high	14 (8.19)	n/a

Note. n/a = not available.

3.1.2. Instruments

The PMP-B (McDonald et al., 2012; original version: Wong, 1998) was translated into Spanish by the authors. This questionnaire measures people's perceptions of meaning in their lives. It contains 21 items arranged in seven subscales that represent sources of meaning: Relationship, Intimacy, Achievement, Self-acceptance, Self-transcendence, Fair treatment, and Religion. Respondents rate each item on a Likert scale ranging from 1 (*not at all*) to 7 (*a great deal*). Higher scores indicate more success in approximating an ideally meaningful life. The PMP-B has previously shown good test-retest reliability (total scale: $r = .73$) and good internal consistencies (ranging from .84 to .95; McDonald et al., 2012). Alphas in our sample ranged between .64 and .91.

Psychological well-being. The Spanish adaptation (Díaz et al., 2006) of the Ryff's Scales of Psychological Well-Being (SPWB; Ryff, 1989) was implemented. This questionnaire measures well-being with a total of 29 items using 6-point Likert-type scales (from *strongly disagree* to *strongly agree*). The SPWB has six subscales: Self-acceptance, Environmental mastery, Positive relations with others, Personal growth, Purpose in life, and Autonomy. The Spanish version has shown appropriate psychometric parameters (Díaz et al., 2006). Cronbach's alphas both in the community sample and in the university student sample ranged between .55 and .84.

Psychological distress. The Spanish version of the Depression Anxiety Stress Scale (DASS-21; Bados et al., 2005; original version by Brown et al., 1997) was used. Items of this scale describe negative emotional states experienced during the last week and are rated on a 4-point Likert-type scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). It consists of 21 items organized in three subscales: Depression, Anxiety, and Stress. The scores of the total scale represent general psychological distress. The Spanish version has shown satisfactory psychometric properties (Bados et al., 2005). In our sample, Cronbach's alpha values for depression, anxiety, stress, and general psychological distress were .90, .83, .83, and .93, respectively.

3.1.3. Procedure

This was an instrumental, transversal study (Montero & León, 2007). The original PMP-B (McDonald et al., 2012) was translated into Spanish, and then it was independently back-translated to English by three researchers fluent in both languages. No significant

discrepancy was found with the original version (see Appendix A). Convenience sampling was used for the three samples. More precisely, Sample 1 was recruited from the local community using personal contacts. Three researchers administrated the self-reported measures in a paper format, including sociodemographic data, the PMP-B, and the SPWB. Participants completed the questionnaires in private and returned them in a closed envelope. Sample 2 (undergraduate students) participated in an online survey created in Google Forms, including sociodemographic data, the PMP-B, the SPWB, and the DASS-21. See Appendix A for all the instruments used. We recruited undergraduate students by distributing the URL of the survey on social media platforms. Sample 3 (undergraduate students used for test-retest) was recruited by one of the authors through class announcements among third-year psychology students at the University of Almeria. In private, they completed the second PMP-B one week after the first one, both times in paper. Respondents in all samples participated voluntarily, received no compensation for their collaboration, provided informed consent (see Appendix B), and were notified of the anonymity and confidentiality of the study. The study was part of a larger research project approved by the Ethics Committee of the Servicio Andaluz de Salud (SAS).

3.1.4. Data analysis

The Statistical Package for the Social Sciences (SPSS, version 24) was used for descriptive data analysis and to assess relationships between instruments. Coefficients omega and omega hierarchical were estimated with the Omega software (Watkins, 2013). Prior to data analysis, data were tested for normality and outliers.

Confirmatory factor analyses were carried out using SPSS AMOS (Version 22) to evaluate five hypothesized factor structures of the PMP-B in the entire sample (community and both student samples). As there was a significant departure from multivariate normality (Mardia's statistic was 87.54, and its affiliated critical ratio was 32.91), ML estimation with bootstrapping was used. Bootstrap samples were set at 250, with 95% bias-corrected confidence intervals. Bollen-Stine bootstrap *p* was used as an alternative to the $\chi 2$ *p*. As the Bollen-Stine *p* value is sensitive to sample size (e.g., Enders, 2002), standardized residual covariances were assessed to determine whether the majority was less than two in absolute value (e.g., Jöreskog & Sörbom, 1993). Final decisions for model acceptance/rejection were based on Comparative Fit Index (CFI), Root-Mean-

Square Error of Approximation (RMSEA), and Standardized Root-Mean-Square Residual (SRMR).

Measurement invariance was tested across samples (community participants and undergraduate students), age groups, and gender. For age comparisons, young (18-34) and middle-older (35+) adults were compared in order to avoid large imbalances in group sizes (see Chen, 2007). Successively more restrictive models of invariance (configural, metric, scalar, and strict levels) were evaluated by CFI, RMSEA, and SRMR differences between models instead of $\chi 2$, as it is sensitive to sample size and non-normality (Chen, 2007).

In order to analyze test-retest reliability in Sample 3, the intraclass correlation coefficient (ICC) was assessed. Spearman's correlation coefficients were calculated between the PMP-B subscales and between the PMP-B and other measures. Finally, regression analyses were used to evaluate how sources of meaning predict psychological well-being and psychological distress.

3.2. Results

3.2.1. Confirmatory Factor Analysis (CFA)

The unifactorial model with all items loading on only one factor (Bollen-Stine bootstrap $p = .004$, $\chi 2 = 3{,}168.21$, $df = 189$, $p < .001$, CFI = .424, RMSEA = .170 [90% CI 1.65, 1.75], SRMR = .131), the hierarchical model with seven factors and one higher order factor (Bollen-Stine bootstrap $p = .004$, $\chi 2 = 854.45$, $df = 182$, $p < .001$, CFI =.870, RMSEA = .082 [90% CI .077, .088], SRMR = .080), and the model with seven correlated factors (Bollen-Stine bootstrap $p = .004$, $\chi 2 = 750.93$, $df = 168$, $p < .001$, CFI = .887, RMSEA = .080 [90% CI .74, .86], SRMR = .068) showed inadequate fit to the data. The bifactor model with seven unique factors and a general factor was identified but showed a Heywood case. The improper solution was handled by constraining the error variance estimate of Item 15 to zero as suggested by several researchers (e.g., Chen et al., 2001). With this modification, the model showed an acceptable fit to the data (Bollen-Stine bootstrap $p = .004$, $\chi 2 = 653.80$, $df = 169$, $p < .001$, CFI =. 906, RMSEA = .073 [90% CI .67, .78], SRMR = .064). Bollen-Stein p suggested a potentially poor fit, but the majority

of the standardized residual covariances (92%) did not exceed two in absolute value, thus the bifactor model was accepted (Figure 1).

3.2.2. Measurement invariance

Configural, metric, and scalar invariance was obtained in all three multiple-group analyses, as shown by acceptable CFI, RMSEA, and SRMR differences and the low percentage of high standardized residual covariances between the successively more restrictive models (Table 2). Strict levels of invariance were not obtained in case of age and sample.

3.2.3. Internal consistency

Cronbach's alphas for the PMP-B (.86) and for all the subscales (ranging between .62 and .89) were deemed to be acceptable. Coefficients omega showed good consistency for all subscales (ranging from .75 to .90). Omega for the PMP-B total was excellent (.93). Omega hierarchical was .76 for the PMP-B total, showing that the common factor explains a large percentage of the total score variance. Accordingly, omega hierarchical was low in some of the subscales (ranging from .34 to .86; Table 3).

Except for Religion that did not show correlations with Achievement, Relationship, and Intimacy, the rest of the subscales were significantly related to each (see Table 4). Item-total correlations were high in all subscales, ranging between .71 and .93.

3.2.4. Test-retest reliability

The intraclass correlation coefficients (ICC) for each of the subscales were: .91 for Self-transcendence, .86 for Achievement, .87 for Relationship, .96 for Religion, .82 for Self-Acceptance, .94 for Intimacy, and .85 for Fair treatment. ICC for the total scale was .91. These data indicate that the test-retest reliability of the Spanish PMP-B is excellent.

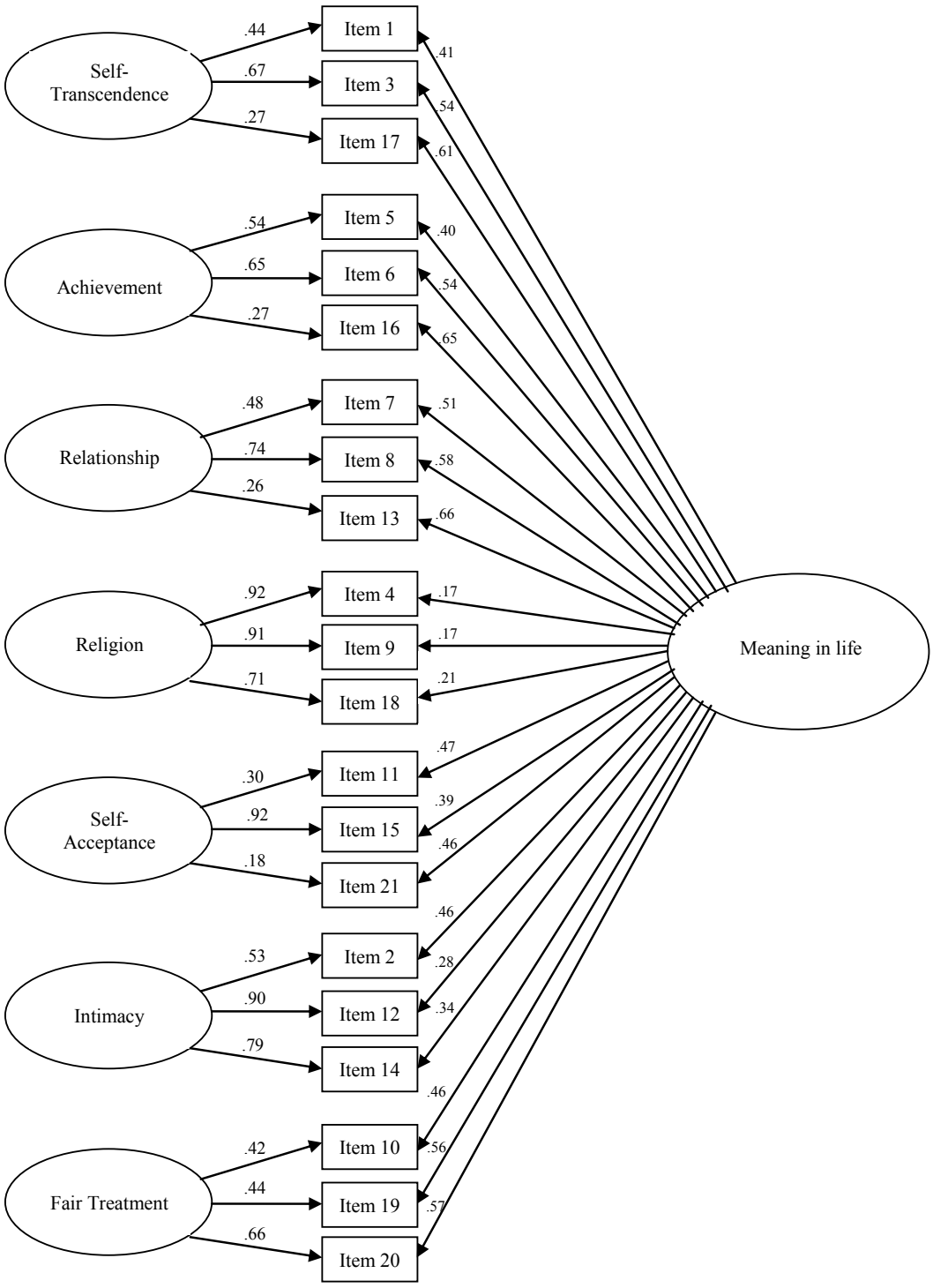

Figure 1. Standardized solution for the bifactor model of the PMP-B in the overall sample. Error is not shown but it was specified for all variables. Error variance estimate was set to zero for Item 15. Error covariances were not permitted. (N = 546).

Table 2. Goodness-of-fit statistics for the multi-group invariance testing.

Model	Comparison	$\chi 2$	*df*	$\Delta\chi 2$	Δdf	*p* for $\Delta\chi 2$	RMSEA	ΔRMSEA	CFI	ΔCFI	SRMR	ΔSRMR
Sample: community (n = 171), student (n = 375)												
1. Unconstrained	-	828.67	338	-	-	-	.052 [CI .047, .056]	-	.906	-	.085	-
2. Measurement weights	1	894.58	372	65.91	34	.001	.051 [CI .047, .055]	.001	.899	.007	.097	.012
3. Structural covariances	2	921.14	380	26.56	8	.000	.051 [CI .047, .055]	.000	.896	.003	.102	.005
4. Measurement residuals	3	1015.60	400	94.46	20	< .001	.053 [CI .049, .057]	.002	.882	.014	.104	.002
Age: 18-34 (n = 390), 35+ (n = 153)												
5. Unconstrained	-	838.75	340	-	-	-	.052 [CI .048, .057]	-	.904	-	.056	-
6. Measurement weights	5	892.73	373	54.02		.012	.051 [CI .046, .055]	.001	.900	.004	.061	.005
7. Structural covariances	6	915.21	381	22.48		.004	.051 [CI .047, .057]	.000	.897	.003	.062	.001
8. Measurement residuals	7	1031.42	401	116.22		< .001	.054 [CI .050, .058]	.003	.878	.019	.063	.001
Gender: male (n = 184), female (n = 362)												
9. Unconstrained	-	850.96	338	-	-	-	.053 [CI .048, .057]	-	.903	-	.078	
10. Measurement weights	9	923.22	372	72.24	34	< .001	.052 [CI .048, .056]	.001	.896	.007	.089	.012
11. Structural covariances	10	931.92	380	8.70	8	.369	.052 [CI .047, .056]	.000	.896	.000	.090	.001
12. Measurement residuals	11	985.25	400	53.33	20	< .001	.052 [CI .048, .056]	.000	.889	.006	.092	.002

Note: Δ refers to change in the respective statistics.

Table 3. Descriptive statistics of the PMP-B.

		Self-transcendence	Achievement	Relationship	Religion	Self-acceptance	Intimacy	Fair treatment	PMP-B Total
Total sample (N = 546)	*M (SD)*	13.39 (3.67)	14.10 (3.87)	15.36 (3.97)	6.56 (4.81)	13.43 (3.65)	14.20 (5.90)	13.29 (3.63)	90.32 (18.11)
	α	.72	.75	.79	.89	.62	.85	.77	.86
	ω	.75	.78	.82	.90	.72	.87	.78	.93
	ω*h*	.33	.36	.34	.86	.34	.71	.37	.76
	Skewness (*SE*)	- 0.37 (0.19)	- 0.31 (0.11)	- 0.70 (0.11)	1.37 (0.11)	- 0.11(0.11)	- 0.40 (0.11)	- 0.19 (0.11)	- 0.36 (0.11)
	Kurtosis (*SE*)	- 0.27 (0.21)	- 0.48 (0.21)	0.03 (0.21)	0.99 (0.21)	- 0.42 (0.21)	-1.23 (0.21)	- 0.29 (0.21)	0.33 (0.21)
Subsamples									
1: Community (n = 171)	*M (SD)*	12.66 (4.49)	13.20 (3.90)	15.46 (3.56)	8.13 (5.31)	14.19 (3.47)	16.20 (5.15)	13.45 (3.61)	93.29 (16.81)
2: Student (n = 295)	*M (SD)*	13.81 (3.86)	14.44 (4.02)	15.26 (4.32)	6.17 (4.61)	12.97 (3.87)	12.86 (6.17)	13.29 (3.82)	88.81 (19.71)
3: Student (n = 80)	*M (SD)*	13.39 (3.12)	14.73 (2.78)	15.49 (3.46)	4.64 (3.17)	13.49 (2.84)	14.86 (5.02)	12.99 (2.87)	89.57 (13.50)
Age									
18-34 (n = 390)	*M (SD)*	13.58 (3.72)	14.41 (3.80)	15.33 (4.06)	5.72 (4.29)	13.04 (3.60)	13.42 (6.02)	13.26 (3.61)	88.75 (17.89)
35+ (n = 153)	*M (SD)*	12.87 (3.53)	13.24 (3.20)	15.42 (3.80)	8.77 (3.39)	14.45 (3.60)	16.11 (5.13)	13.37 (3.66)	94, 22 (18.30)
Gender									
Male (n = 184)	*M (SD)*	13.31 (3.42)	14.77 (3.54)	15.31 (3.92)	6.73 (4.76)	13.92 (3.81)	13.90 (6.01)	13.66 (3.59)	91.61 (18.01)
Female (n = 362)	*M (SD)*	13.43 (3.80)	13.75 (3.98)	15.39 (4.00)	6.47 (4.84)	13.18 (3.54)	14.35 (5.84)	13.11 (3.64)	89.67 (18.16)

Table 4. Correlations of the subscales of the PMP-B in the entire sample (N = 546).

Measure	Self-transcen-dence	Achieve-ment	Relationship	Religion	Self-acceptance	Intimacy	Fair treatment
Achievement	.58***						
Relationship	.41***	.39***					
Religion	.16***	.06	.05				
Self-acceptance	.30***	.33***	.30***	.16***			
Intimacy	.12*	.17***	.32***	.04	.25***		
Fair treatment	.35***	.33***	.43***	.10*	.38***	.19***	
PMP Total	.63***	.62***	.65***	.38***	.61***	.57***	.61***

* $p < .05$; ** $p < .001$; *** $p < .0001$. Two-tailed.

3.2.5. Demographic differences and relationships with other variables

Descriptive statistics of the PMP-B in all samples can be observed in Table 3. To test H1, we compared age groups and found that older adults tended to have higher PMP-B scores (Mdn = 96) than younger adults (Mdn = 91), U =24,666.50, Z = -3.14, p = .002. There were no gender-based differences nor differences between students responding online and on paper ($p > .05$).

As predicted by H2, the PMP-B total scores had strong to moderate positive correlations with the SPWB (see Table 5). As for the subscales of the SPWB, Purpose in life and Self-acceptance showed the strongest relationships with the PMP-B. Among undergraduates, the PMP-B total scores were negatively associated with general psychological distress, anxiety, and depression (H3). However, we found no associations with stress levels ($p > .05$).

When all PMP-B subscales were entered into a simultaneous regression analysis to predict psychological well-being (H4), 40% of the variance was explained ($p < .001$). The sources of meaning predicting psychological well-being were Achievement ($\beta = .30$, $p < .001$), Relationship ($\beta = .17$, $p < .001$), Intimacy ($\beta = .16$, $p < .001$), and Fair treatment ($\beta = .13$, $p = .002$). Likewise, Achievement ($\beta = .33$, $p < .001$), Intimacy ($\beta = .14$, $p = .001$), Fair treatment ($\beta = .16$, $p < .001$), and Self-transcendence ($\beta = .13$, $p = .009$) predicted higher scores on the Purpose in life subscale of the SPWB.

Table 5. Correlations between the PMP-B and other measures.

Measure	Self-transcendence	Achievement	Relationship	Religion	Self-acceptance	Intimacy	Fair treatment	PMP-B Total
Sample 1, community (n = 171)								
SPWB-Self-Accept.	.25**	.35***	.32***	.09	.27***	.35***	.44***	.49***
SPWB-Positive Rel.	.13	.13	.54***	-.10	.16*	.17*	.29***	.26**
SPWB-Autonomy	-.07	.18*	.03	-.13	.02	.10	-.02	.00
SPWB-Envir. Mastery	.18*	.23**	.21**	.02	.28***	.28***	.36***	.33***
SPWB Purpose in Life	.38***	.43***	.33***	.22**	.26***	.27***	.36***	.51***
SPWB-Personal Gr.	.32***	.33***	.27***	.14	.23**	.18*	.20**	.38***
SPWB-Total	.26***	.35***	.39***	.03	.26**	.28***	.35***	.42***
Sample 2, students (n = 295)								
DASS-Depression	-.27***	-.35***	-.27***	-.03	-.20***	-.23***	-.26***	-.36***
DASS-Anxiety	-.04	-.15**	-.08	-.02	-.16**	-.06	-.16**	-.15**
DASS-Stress	-.01	-.02	-.08	-.03	-.09	-.02	-.16**	-.08
DASS-Total	-.14*	-.22***	-.18**	-.04	-.18**	-.13*	-.24***	-.25***
SPWB-Self Accept.	.48***	.51***	.45***	.08	.36***	.30***	.44***	.58***
SPWB-Positive Rel.	.27***	.19**	.59***	-.12*	.14*	.32***	.28***	.37***
SPWB-Autonomy	.19**	.29***	.12*	-.00	.07	.08	.09	.19**
SPWB -Env. Mastery	.35*	.43***	.30***	-.00	.27***	.36***	.31***	.45***
SPWB-Purpose in Life	.46***	.54***	.34***	.08	.37***	.25***	.36***	.52***
SPWB-Personal G.	.40***	.45***	.34***	.00	.27***	.20***	.21***	.40***
SPWB-Total	.50***	.56***	.49***	.00	.33***	.33***	.39***	.57***

* $p < .05$; ** $p < .001$; *** $p < .0001$. Two-tailed.

Only 9% of the variance of the DASS-21 (p = .001) was explained by the PMP-B. More precisely, the PMP-B accounted for 17% of the variance in depression (p < .001) and 6% in anxiety (p = .009). The subscales Achievement (β = -.18, p = .019) and Fair treatment (β = -.17, p = .012) predicted lower levels of general psychological distress. Depression was predicted by Achievement (β = -.27, p < .001), Fair treatment (β = -.14, p = .030), and Intimacy (β = -.12, p = .030). Anxiety was predicted by Achievement (β = -.19, p = .015) and Fair treatment (β = -.14, p = .044).

3.3. Discussion

The objective of this study was to adapt the PMP-B to the Spanish-speaking population and evaluate its psychometric properties. With this aim, we recruited a community sample and university students, and tested different indices of validity evidence. Confirmatory factor analyses indicated that the only factor structure with acceptable fit to the data was the bifactor model with one general factor and seven specific factors. These results mean that the PMP-B measures seven distinct sources of meaning as proposed by the original authors (McDonald et al., 2012; Wong, 1998), but it is possible to use the total scores as a general indicator of meaning in life. To our knowledge, this is the first study confirming a factor structure that justifies the use of the PMP total score and each subscale as well. Invariance analyses indicated that at least the global factor structure, factor loadings, and item intercepts are equivalent across groups (gender, age group, and sample). These results support that the assessment of mean differences was valid, and therefore was not result of measurement bias.

Alpha and omega coefficients suggested good internal consistency of the total PMP-B and the subscales. The omega coefficient for the global PMP-B was excellent (.93), further supporting the use of the PMP-B total scores, including clinical settings. Apart from the subscale of religion, all subscales were significantly related to each other. The PMP-B in other languages has shown similar internal consistency (Brouzos et al., 2016; Chika Chukwuorji et al., 2019; Demirbaş-Çelik, 2018; Krumrei-Mancuso, 2017; McDonald et

al., 2012), which increases the validity of our results. Test-retest reliability after one week was also excellent.

This validity evidence represents incremental validity over the SMiLE. For instance, there is no data about measurement invariance and confirmatory analysis of the SMiLE (Monforte-Royo et al., 2011). Indeed, its format does not allow a dimensionality analysis based on sources of meaning. To date, the Spanish PMP-B is the only meaning tool that measures standardized sources of meaning. Hence, the PMP-B can be an exceptional complement to the few existing meaning measures. Especially, areas such as psycho-oncology could benefit from this instrument (e.g., Van der Spek et al., 2017).

To evaluate validity evidence of the PMP-B based on relations with other variables, we formulated five hypotheses. H1 predicted that older people would show higher PMP-B scores than young people. Our results confirmed H1 and are consistent with previous findings suggesting that meaning in life increases across the lifespan (Schnell, 2009; Steger et al., 2009). The development of meaning across ages could partially explain the general increase of positive mental health observed in some western countries (Schönfeld et al., 2017). Nonetheless, cultural differences and other psychosocial factors should be taken into consideration (Sapranaviciute-Zabazlajeva et al., 2018).

The PMP-B scores were moderately related to psychological well-being in both samples (H2), explaining 40% of the variance (see also Brouzos et al., 2016; Demirbaş-Çelik, 2018). These findings are congruent with the extensive investigation that highlights the centrality of meaning in psychological well-being (Ryff, 2014a; Ryff et al., 2016). The sources of meaning predicting psychological well-being were achievement, relationship, intimacy, and fair treatment. The sources of meaning that predicted purpose in life were achievement, intimacy, fair treatment, and self-transcendence. In line with H4, most of these sources were relational; they represent positive and reciprocal relationships with others and with the society in general. Our data also revealed that striving for and attaining significant life goals are crucial to experience meaning in life. Combined with previous research (Brouzos et al., 2016; Krok, 2018; Schnell, 2011; Wong, 2012b), these findings emphasize the importance of relational sources of meaning in meaning-centered interventions, versus self-oriented ones (Vos, 2016; Vos & Vitali, 2018).

Additionally, the PMP-B scores were negatively associated with general psychological distress, depression, and anxiety (H3). The strongest relationships were observed with depression levels, and their predictors were achievement, fair treatment, and intimacy (see also Disabato et al., 2017; Krumrei-Mancuso, 2017; Steger et al., 2006; Testoni et al., 2018). Finally, we found no correlations with physiological stress. The latter results support the notion that meaning in life may prevent stress from transforming into anxiety, depression, and other health problems (Van Tongeren et al., 2017).

Several limitations of the present study should be considered. For instance, the sample was not representative of the general Spanish-speaking population, most participants were young females from the provinces of Murcia and Almería. It is also impossible to determine to what extent the application method of the questionnaires influenced the differences observed between the community sample and university students. However, as there were no significant differences between the two student groups (online application versus on paper), we may conclude that our findings are most probably not due to the application format of the measures. Only student participants completed the DASS-21, thus the reported associations with the PMP-B may be limited to this specific population. Future studies could evaluate these findings in different samples. Finally, the one-week test-retest interval may have been too short to assess the stability of the PMP-B over time. Nevertheless, the original questionnaire showed to be stable over a five-week period (r = .73; McDonald et al., 2012).

Despite these shortcomings, this chapter provided several indicators of validity evidence that supported the use of the PMP-B to measure meaning in life in the Spanish adult population. The short format of the questionnaire and assessment of personal sources of meaning make the PMP-B a noteworthy contribution to the meaning-centered research.

Chapter 4*

Study 2.
Impact of cancer on personal values:
The psychological benefits of meaning adaptability

Ahora que empiezo de cero,
que el tiempo es humo,
que el tiempo es incierto,
abrázame fuerte, amor, te lo ruego,
por si esta fuera la última vez.

PAU DONÉS, JARABE DE PALO
Humo

Once we had available a multidimensional measure of meaning in life in Spanish, we proceeded to carry out a novel study in the cancer population with the aim of assessing the impact of a cancer diagnosis in the system of personal values and meaning in life.

The diagnosis of an illness such as cancer affects many aspects of one's existence, including the presence of one's own mortality. Existential concerns among cancer patients have been extensively collected in the literature, including qualitative and quantitative studies (for a review, Henoch & Danielson, 2009). For example, in patients with advanced cancer, it has been found a desire for hastened death which is related to meaninglessness (Morita et al., 2004). About 17% of patients with advanced cancer have reported a high

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* Some parts of this chapter have been published by Australian Academic Press in the book ***Curing the Dread of Death: Theory, Research and Practice***. Link to the website: https://www.australianacademicpress.com.au/books/details/315/Curing_the_Dread_of_Death_Theory_Research_and_Practice

desire to terminate their lives primarily because of depression, hopelessness, and loss of meaning rather than pain (Breitbart et al., 2000). In fact, meaning in life has been found to mediate the relationship between physical impairment and the wish to hasten death (Guerrero-Torrelles et al., 2017). Similar findings related to the experience of meaninglessness in advanced cancer have been observed by Chochinov et al. (2002), who reported that 47% of patients in their last months of life reported a certain loss of sense of dignity. In this line, a diverse sample of cancer patients reported the need to receive help with overcoming their fears (51%), finding hope (42%), meaning in life (40%), and spiritual resources (39%, Moadel et al. 1999).

Other studies have also supported the relationship of meaning in life with well-being in cancer. For instance, Testoni et al. (2018) observed that meaning in life was inversely related to depression and anxiety. However, in comparison with healthy university students, cancer patients showed less meaning in life. Jaarsma et al. (2007) also found that the experience of meaning in life in a heterogeneous group of cancer patients was positively related to psychological well-being, while negatively associated with feelings of distress. This observation was additionally supported in a longitudinal study by Vehling et al. (2011), indicating that global meaning was a negative predictor of depression and demoralization.

Meaning-centered therapies have provided further evidence about the clinical relevance of meaning in life among cancer patients. These interventions have generally shown beneficial effects on spiritual well-being, quality of life, sense of dignity and meaning, depression, anxiety, and desire for death, among others (e.g., Breitbart et al., 2018, 2012, 2010; Chochinov et al., 2011; Henoch & Danielson, 2009). For example, a randomized trial by Van Der Spek et al. (2017) demonstrated that a meaning-centered group psychotherapy with cancer survivors was successful in enhancing personal meaning, psychological well-being, mental adjustment, while it reduced psychological distress. Similarly, a meaning-making intervention in people with breast or colorectal cancer improved self-esteem, optimism, and self-efficacy (Lee et al., 2006). Managing Cancer and Living Meaningfully (CALM) is another example of how a meaning-centered intervention

can be effective for depression and anxiety while enhancing spiritual well-being and quality of life (Lo et al., 2015).

ACT (Hayes et al., 1999), which can be considered as a meaning-centered therapy because of its emphasis in promoting actions in accord with personal values, has also shown effectiveness with the oncological population in improving emotional state, quality of life, and psychological flexibility (for a review see, González-Fernández & Fernández-Rodríguez, 2019; Hulbert-Williams et al., 2015). Overall, these findings outline meaning in life as a fundamental clinical aspect to be treated in cancer.

4.1. Spirituality and cancer

One of the concepts closely related to meaning in life is spirituality, which is defined as "the way in which people understand their lives in view of their ultimate meaning and value" (Muldoon & King, 1995, p. 336). This construct has been typically associated with religiosity, however, according to its definition, spirituality addresses a wider area than religion. In cancer, the positive relationship between spirituality and well-being has been extensively supported (for a review, Visser, Garssen, & Vingerhoets, 2009). For instance, Nelson et al. (2002) found a strong negative association between spiritual well-being and depression in terminally ill patients. In another study (McClain et al., 2003) among patients with a life expectancy of fewer than three months, it was observed that spiritual well-being had an effect on end-of-life despair, including the desire for hastened death, hopelessness and suicidal ideation.

Spirituality is a multidimensional construct. Among the principal components of spiritual well-being suggested in the literature are meaning/peace (one's sense of meaning and purpose in life) and faith (perceived comfort derived from a connection to something larger than the self, Peterman et al., 2002). Yanez et al. (2009) reported that the component of meaning/peace predicted less depressive symptoms and higher vitality in breast cancer patients across one year. Meaning/peace also predicted improved mental health and lower cancer-related distress. On the other hand, the component of faith was related to increased cancer-related growth. Based on the extensive evidence about the positive role of

spirituality in cancer, spiritual well-being has been included as one of the main components in the assessment of the quality of life in cancer and other chronic diseases (Bredle et al., 2011; Peterman et al., 2002).

4.2. Personal values and cancer

Another meaning-related area studied in cancer has been that of personal values. Fegg et al. (2005) found that the most important values for terminally ill patients were benevolence, self-direction, and universalism, whereas power, achievement, and stimulation had the lowest importance. In comparison with healthy adults, these patients scored higher in benevolence and self-enhancement values. This study's data suggested that security, conformity, and tradition (conservation values) can protect the patients' quality of life in the palliative care situation. Another study (Testoni et al., 2018) found that cancer patients reported lower scores in the source of achievement, while they scored higher in relationship as a source of meaning than healthy university students. Likewise, Tomás-Sábado et al. (2015) observed that the main sources of meaning in Spanish patients with advanced cancer were family, partnership, well-being, and friends. However, some cultural differences were observed in comparison with German and Swiss patients. The latter additionally prioritized animals/nature and leisure time (see also, Scheffold et al., 2014). In other two studies (Jaarsma et al., 2007; Van Der Spek et al., 2017), both a heterogeneous group of Dutch cancer patients and survivors indicated relationships with other people (mainly intimate relationships), achievement, and self-transcendence as their major sources of meaning in life.

In summary, these findings suggest that close relationships and contributions to others' welfare play a central role in the experience of meaningfulness among people with cancer. However, there is certain controversy about the contribution of achievement, power, and other self-oriented values to meaning in life. Further studies with larger samples and reliable control groups are needed to clarify the major sources of meaning and their relationship with well-being in the oncological population.

4.3. Impact of cancer on meaning in life and personal values

Although values are considered to remain stable over time, they can change for different reasons such as socialization, self-confrontation, cultural upheaval, therapy, or emotionally significant events (Rokeach, 1973). The experience of cancer is undoubtedly such an event as it supposes an existential plight for many people, in which the purpose in life, one's identity, and worldview are challenged, independently of the cultural background (Lee, 2008). In this context, not only is there a need to assimilate the diagnosis and consequences of the illness into the meaning in life, but also to accommodate the meaning in life to the cancer experience (Joseph & Linley, 2005).

One study (Sharpe et al., 2005) reported that within the course of metastatic cancer, approximately half of the patients changed their life priorities, especially family and health became more important over time. This response shift in life priorities was related to a better adjustment to the illness. There is also literature showing that a large number of cancer survivors experience PTG after cancer as manifested in increased personal strength, new possibilities, more positive relationships to others, a reappraisal of life priorities, and a positive spiritual change (e.g., Cordova et al., 2007; Thornton, 2002). However, a common limitation of the latter studies has been the instruments' positive bias, mainly that of the Post-Traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). This instrument only assesses items with positive statements about the impact of the "traumatic" experience. This format itself can induce people to ignore the negative aspects of their illness and respond only in a positive way. As a second limitation, PTG studies typically do not investigate what specific values and sources of meaning in life change as a consequence of cancer, beyond a general improvement in relationships and spirituality.

Despite the importance of the PTG literature in cancer, there remains a paucity of empirical studies providing systematic evidence on how a cancer diagnosis impacts the system of values. Ethical restrictions and the frequent unpredictability of a cancer diagnosis hinder longitudinal studies analyzing values before and after the diagnosis. Studies of this kind must be retrospective. To date, we have only found one empirical study centered on how people shift their system of values after a cancer diagnosis (Greszta & Siemińska, 2011). This study reported that after the diagnosis, patients significantly gave more

importance to religious morality (salvation, forgiving, being helpful, clean), personal orientation (self-respect, true friendship, happiness), self-constriction (self-control, obedience, honesty), family security, and delayed gratification. At the same time, values such as immediate gratification, self-expansion (being capable, ambitious, broadminded), competence (a sense of accomplishment, being imaginative, intellectual) decreased in importance. However, despite these relevant findings, some limitations of this study should be considered. For instance, the authors used a non-psychometrically validated instrument to evaluate perceived changes in values, collected a small sample of cancer patients (n = 50) and did not include a control group.

Therefore, further studies including larger samples, control groups, and validated instruments are necessary to expand the earlier findings and determine the impact of cancer on personal values and meaning in life. In this regard, it would also be important to explore the clinical relevance of meaning adaptability. In this work, we define *meaning adaptability* as the accommodation of meaning in life to the cancer experience (for similar considerations, see Joseph & Linley, 2005). One indicator of this meaning accomodation is the change in personal values. Values' changes represent the degree to which an individual has clarified what is important in their life after a diagnosis. Further indicators of meaning adaptabiliby could be the changes of personal goals and life directions or the clarification of one's identity, among others. The present study focuses on values' change as an indicator of meaning adaptability. In this vein, it is important to know if people adapting their system of values after a cancer diagnosis benefit from higher levels of meaning in life and better indices of quality of life than those who did not change their values. Insights about how people adapt their meaning in life to the cancer experience and its psychological benefits could be relevant, for example, to enhance current psychological treatments for cancer, particularly those aimed to promote meaning and spiritual well-being (Breitbart et al., 2012, 2010; Chochinov et al., 2011; Henoch & Danielson, 2009).

Different theories have been proposed to explain the change of personal values following death remainders such as a cancer diagnosis. Probably the most accepted one is the Terror Management Theory (TMT, Greenberg et al., 1997; Solomon et al., 1991). According to TMT, the terror produced by death remainders activates defense mechanisms

such as the reaffirmation of cultural beliefs and the personal symbolic system to counteract death anxiety. Thus, this theory states that what ultimately motives the change of personal values in cancer is the avoidance of death anxiety.

An alternative explanation of the values' change in cancer is offered by the Meaning Management Theory (MMT, Wong, 2008). This theory includes the defensive mechanisms proposed by TMT, but incorporates a new system. According to MMT, death reminders not only awaken defense mechanisms against the terror of death but also life appreciation, the quest for meaning, and purposeful living despite adversity. On the one hand, defensive mechanisms serve a protective function; they seek security and self-preservation. On the other hand, the positive and proactive quest for meaning serves a growth-oriented function; it represents the tendency of individuals to confront a crisis by creating opportunities for personal development. In line with MMT, many people are able to confront death with acceptance instead of avoidance, which is associated with less existential distress and less anxiety (e.g., Philipp et al., 2019). However, denial, avoidance, and other defensive mechanisms have been related to psychological maladjustment and less meaning in life (e.g., Dempsey et al., 2000; Machell et al., 2015), which is inconsistent with TMT. Further theories consistent with MMT are Self-Determination Theory (SDT, Ryan & Deci, 2000, 2004) and Socioemotional Selectivity Theory (SST, Carstensen, 2006; Carstensen et al., 1999, see Discussion).

A factor that should be taken into account when analyzing the processes involved in the impact of cancer on personal values is trait mindfulness, which is defined as a disposition characterized by receptive attention to present experience (Brown & Ryan, 2003). Trait mindfulness has been found to influence the response to death remainders by reducing the defense response to mortality salience (Niemiec et al., 2010). Under mortality salience, more mindful individuals show less suppression of death thoughts, less worldview defense, and less self-esteem striving than individual with lower levels of mindfulness (Niemiec et al., 2010). In this line, it would also be important to know whether trait mindfulness is related to the change of values experienced after cancer. The assessment of trait mindfulness could help to understand whether the shift in values among cancer patients is due to defense mechanisms to protect against the terror of death, as

proposed by the TMT, or is somewhat explained by proactive mechanisms as those proposed by MMT. Thus far, we have found no study investigating the influence of mindfulness on the impact of cancer on values.

4.4. Aims of Study 2

Study 2 of this doctoral dissertation was aimed to fill most of the above-mentioned gaps in the literature. We analyzed how a cancer diagnosis impacted meaning in life and personal values, and explored the relationship of meaning adaptability with global meaning in life, trait mindfulness, and quality of life. Meaning adaptability was measured by the perceived change in personal values. A heterogeneous group of patients with cancer and a healthy control group with similar demographic characteristics were compared. Overall, the study had the following objectives:

1) To measure perceived changes in values after a cancer diagnosis. For this aim, we developed a short instrument (the Valued Living Questionnaire-Perceived Change, VLQ-PC) and investigated its psychometric properties. To date, we have found no instrument in the literature with validated scores to measure perceived changes in personal values. Perceived changes in values were compared between the cancer group and the control group. Additionally, we compared current personal values and sources of meaning between groups.
2) To evaluate whether cancer patients experience more meaning in life and valued living (living in accordance with personal values) than healthy adults.
3) To explore the relationship of meaning adaptability to the cancer experience with global meaning in life, trait mindfulness, and different aspects of quality of life. For that purpose, we performed a cluster analysis in order to identify groups of people with different levels of meaning adaptability. Then, we tested whether patients indicating more meaning adaptability benefit from a stronger sense of meaning in life and a higher quality of life than those with inflexible patterns of values and meaning.

4.5. Method

4.5.1. Participants

A total of 382 participants agreed to volunteer in the study. The sample was composed of a heterogeneous group of patients with cancer (n = 210) and a healthy control group (n = 172). Cancer patients were diagnosed with several types of primary cancer in different stages (see Table 6) and were admitted to the oncology unit of the public Hospital de Torrecárdenas, Almería (Spain). The healthy group was people from a community sample recruited from the provinces of Almeria and Murcia. They shared the same demographic characteristics as the final cancer patient sample. The inclusion criteria were being older than 18 years, having no diagnosis of a severe mental disorder, and having sufficient knowledge of the Spanish language. Patients diagnosed with cancer less than one month or more than five years ago were not included. We also excluded patients in a too poor physical condition or with significant cognitive impairment, as judged by their oncologist.

Additionally, 60 psychology students (80% females) ranging from 19-54 years (M = 23.4, SD = 7.36) from the University of Almeria were recruited to perform test-retest reliability analysis of the VLQ-PC.

4.5.2. Measures

Valued Living Questionnaire-Perceived Change (VLQ-PC). We applied a modified version of the VLQ (Wilson et al., 2010). The original VLQ is a two-part instrument that assesses valued living through 10 life domains: 1) Family (other than parenting and intimate relations), 2) Partner/intimate relations, 3) Parenting, 4) Friendship, 5) Work, 6) Education, 7) Recreation, 8) Spirituality, 9) Citizenship/Community, and 10) Physical self-care. The first part measures the importance given to each area on a 10-point Likert scale. The second part measures how consistently the person has lived in accordance with each valued area during the last week. A composite of these two parts is calculated to provide a global valued

living score. Cronbach's alphas of the two parts and the global score of the original version have shown adequate to good internal consistency (Wilson et al., 2010).

Table 6. Descriptive statistics of the sample in Study 2.

	Cancer patients (*n* = 144)	**Community sample (*n* = 158)**
Gender (female; *n*, %)	88 (61.1)	93 (58.9)
Age (mean, *SD*)	48.56 (10.36)	48.50 (12.94)
Marital status (married/couple; *n*, %)	102 (70.8)	108 (68.4)
Socioeconomic status (middle class; *n*, %)	132 (91.6)	147 (93.0)
Education (*n*, %)		
Elementary/High school	66 (45.8)	64 (40.6)
Associate degree, BA or higher	78 (54.2)	90 (57.0)
Diagnosed with non-severe mental disorder (*n*, %)	10 (6.9)	11 (7.0)
Active psychological/psychiatric treatment (*n*, %)	33 (22.9)	11 (7.0)
Religious (*n*, %)	113 (78.5)	111 (70.2)
Weekly/daily religious practice (*n*, %)	44 (30.5)	16 (10.1)
Primary cancer (*n*, %)		
Breast	53 (36.8)	n/a
Colorectal/ Intestinal	24 (16.6)	n/a
Lung	15 (10.4)	n/a
Haematological	12 (8.4)	n/a
Gynaecological	9 (6.3)	n/a
Testicular	8 (5.6)	n/a
Sarcoma	4 (2.8)	n/a
Other	19 (13.2)	n/a
Stage		
In situ	3 (2.1)	n/a
I	20 (13.9)	n/a
II	35 (24.3)	n/a
III	43 (29.9)	n/a
IV	37 (25.7)	n/a
Time since diagnosis (months, *SD*)	18.31 (17.89)	n/a
In active treatment (*n*, %)	102 (70.8)	n/a

For the present study, we translated the questionnaire into Spanish and made three substantial modifications (see Appendix A). Firstly, we introduced an eleventh life domain to include general self-esteem called *Myself*. Secondly, we changed the instructions of the second part to measure "personal implication" in each area instead of "consistency", which was a confusing term to be abstracted by many respondents. The personal implication,

understood as to how much time and energy one person considers that has dedicated to a particular life area, can be a more precise behavioral measure than consistency. Thirdly, we included a measure of perceived changes in importance and implication in each area since the cancer diagnosis (in the case of cancer patients) or the last year (in the case of the control group). Retrospectively, respondents rated on a 9-point Likert scale from -4 (*much less important/implicated now*) to +4 (*much more important/implicated now*) the perceived change in the eleven life domains. Zero represented the same perceived level of importance or implication than before. The present study provides different indicators of validity evidence of this modified version.

Portrait Values Questionnaire (PVQ). The PVQ (40-item version, Schwartz et al., 2001; Spanish version by Solano & Nader, 2006) assesses 10 cross-cultural human values: Universalism (understanding, appreciation, tolerance, and protection for the welfare of all people and for nature), Benevolence (preservation and enhancement of the welfare of people with whom one is in frequent personal contact), Conformity (restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms), Tradition (respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide), Security (safety, harmony, and stability of society, of relationships, and of self), Power (social status and prestige, control or dominance over people and resources), Achievement (personal success through demonstrating competence according to social standards), Hedonism (pleasure or sensuous gratification for oneself), Stimulation (excitement, novelty, and challenge in life), and Self-Direction (independent thought and action—choosing, creating, exploring). Each item describes a person in two sentences. Respondents must rate on a 6-point Likert scale how similar they are to that person depicted, from 1 (s*he does not look like me at all*) to 6 (s*he looks like me very much*). The instrument has a female and a male version.

In this study, to measure perceived differences in the PVQ values, we created a new retrospective version (see Appendix A) changing all items into past tense and asking participants how similar they were to the person described before receiving the cancer diagnosis (in the case of cancer patients) or one year ago (the last spring, in the case of the

control group). Present and past values' scores were compared. Cronbach's alphas ranged between .46 and .77.

Personal Meaning Profile-Brief (PMP-B). The Spanish version of the PMP-B (Carreno et al., 2020; original, McDonald, et al., 2012) was used. This questionnaire contains 21 items that measure perceptions of meaning in life through seven sources: Achievement, Relationship, Religion, Self-transcendence, Self-Acceptance, Intimacy, and Fair Treatment (see Chapter 3). In the present sample, Cronbach's alpha of PMP-B total was .85 and for the subscales ranged between .60 and .90.

Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being (FACIT-Sp). FACIT-Sp (Peterman et al., 2002) is a widely used measure to assess quality of life and spiritual well-being in cancer and other chronic diseases (Bredle et al., 2011). Raters indicate to which extent they agree with 39 items on 4-point Likert-type scales, ranging from 0 (*not at all*) to 4 (*very much*). It is composed of five subscales: Physical well-being (PWB), Social/Family well-being (SWB), Emotional well-being (EWB), Functional well-being (FWB), and Spiritual well-being (Sp12). Spiritual well-being is measured by two components: Meaning/Peace and Faith. Two total scores can be obtained on the measure: a) FACT-G (PWB + SWB + EWB + FWB) and b) FACIT-Sp total score (Sp12 + FACT-G). Higher scores in FACT-G represent higher general quality of life, while scores in FACIT-Sp total reflect an extended index of quality of life that includes spiritual well-being (Bredle et al., 2011). The Spanish versions of FACT-G (Dapueto et al., 2003) and the FACIT-Sp scale (Peterman et al., 2002) have shown good psychometric properties. In this study, Cronbach's alphas of the subscales ranged from .74 to .88. Cronbach alpha for the global FACIT-Sp was .91.

Mindfulness Attention Awareness Scale (MAAS). We finally used the Spanish version of the MAAS (Soler et al., 2012; original, Brown & Ryan, 2003). The MAAS measures dispositional mindfulness through 15 items with a 6-point scale from 1 (*almost always*) to 6 (*almost never*). Higher scores indicate higher trait mindfulness. Cronbach's alpha in the total sample was .85.

4.5.3. Procedure

This was a cross-sectional study. A convenience sampling method was employed for recruiting cancer patients and healthy adults. For the cancer group, we first received a list by the oncologist and the psycho-oncologist of the hospital containing those patients who met the criteria for participation. Then, we delivered the questionnaire package personally to inpatients and outpatients receiving their treatment or attending for periodic revision. The survey package included socio-demographic questions, the MAAS, the VLQ-PC, the two versions of the PVQ, the PMP-B, and the FACIT-Sp (see Appendix A). Patients signed the informed consent form (see Appendix B) and filled in the paper questionnaires privately, in a hospital room of the oncology unit. Completion time was approximately 30 minutes but patients were given the whole day to complete the questionnaires and return them in the hospital. No questions were asked about the patient's medical history, this information was downloaded from the hospital's database having explicit permission from the patients, their doctors and the hospital. In order to maintain anonymity and confidentiality, the questionnaires did not contain any personal data. Cancer characteristics were matched with the questionnaire responses by a physician working in the hospital thus no information remained to identify the participants. Patients were notified that their participation in the study was voluntary, they could stop their participation at any moment, did not receive any compensation, and their treatment in the hospital was not affected by their participation in any way. The data collection of the cancer patient sample took place from February to July 2017.

The control group was recruited from a community sample in the provinces of Murcia and Almería. In order to have similar socio-demographic characteristics as the cancer patient sample, the control group was recruited after we finished the data collection in cancer. We stratified gender and age based on the cancer group characteristics. Four researchers delivered the questionnaires among their personal contacts who met the established criteria. The survey package included socio-demographic questions, the MAAS, the VLQ-PC, the two versions of PVQ, and PMP-B. Participants gave their informed consent, filled in the paper questionnaires alone, and returned them to the same researcher in a closed envelope without any personal information. Their participation was

voluntary, they received no compensation and were notified of the study's anonymity and confidentiality. Finally, psychology students were recruited through class announcements among third-year psychology students at the University of Almeria for the test-retest analysis of the VLQ-PC. In private, they completed the second questionnaire 10 days after the first one. The study was previously approved by the Ethical Committee of the Servicio Andaluz de Salud (SAS).

4.5.4. Data analysis

Statistical analyses were performed using SPSS, version 24.0 (IBM Corp., 2016). There was minimal missing data (1.66% in the cancer patient sample, 1.04% in the community sample). Little's Missing Completely at Random Tests were not significant (cancer patient sample: $\chi 2 = 161.90$, $df = 19106$, $p = 1.00$; community sample: $\chi 2 = 2095.22$ $df = 19178$, $p = 1.00$), showing that data were missing completely at random. Missing data were replaced with the Expectation-Maximization algorithm for each subscale, except for the items of the VLQ-PC, as they all measure separate areas. No outliers were removed.

To test the psychometric properties of the VLQ-PC, we calculated different indices of reliability and validity evidence. Cronbach's alpha was calculated for the four subscales (Importance, Perceived Change in Importance, Personal Implication, and Perceived Change in Personal Implication) and the VLQ-PC composite to analyze internal consistency. In order to analyze test-retest reliability, the intraclass correlation coefficient (ICC) was assessed. To evaluate concurrent and convergent validity of the VLQ-PC scores, we compared them with the PVQ, PMP-B, FACIT-Sp, and MAAS scores.

Means and standard variations were computed, and tests of normality, kurtosis, and skewness were performed for the study variables. As normalities were violated, differences between cancer patients and healthy adults were assessed with Mann Whitney's *U* tests and Chi-square tests. Intra-group changes in the case of present and past PVQ were evaluated with Wilcoxon signed ranks tests, the same as intra-group changes in VLQ-PC. Moreover, effect sizes *r* were calculated for Mann-Whitney's *U* tests (see Fritz, Morris, &

Richler, 2012). Effect sizes of .10, .20, and .30 were considered small, medium, and large, respectively (see Cohen, 1988).

Correlations in the cancer group were evaluated with Spearman's rank correlation coefficients, and linear regression analyses were conducted to determine the strength of predictors of well-being measured by FACIT-Sp. To compare scores depending on the stage of cancer, we excluded patients at stage 0 since only three people were in this category.

Two-step cluster analyses with log-likelihood distance measure were performed using VLQ-PC total scores of importance, personal implication, perceived changes in importance, and perceived changes in implication as classification variables. One participant was excluded from these analyses as he had no sufficient implication difference data. This analysis is fairly robust to possible violations of normality, and multicollinearity of clustering variables was not detected as all variance inflation factors were below two. All variables were z-standardized by default. Cluster solutions of 2, 3, 4, and 5 were evaluated by Akaike's Information Criterion (AIC) and by the average silhouette coefficient. AIC was used instead of the Bayesian Information Criterion (see Yang, 2005). The smallest AIC value and the largest AIC change accompanied by an average silhouette coefficient equal or above 0.50 indicated good model fit (e.g., Kaufman & Rousseeuw, 2005). The stability of the chose solution was also assessed by repeating the analysis using the hierarchical method. The derived clusters were compared by evaluation variables, such as demographic data, well-being measures, and meaning sources using the Chi-square test for categorical variables and Kruskal-Wallis *h* tests for continuous variables were implemented. Kruskal-Wallis tests were followed by Dunn's nonparametric comparisons with Bonferroni adjustments. Chi-square post hoc analyses also implemented the Bonferroni correction.

4.6. Results

4.6.1. Sample characteristics

From the 210 cancer patients contacted, 144 (68.57%) returned the questionnaires with sufficient demographic data, did not leave entire questionnaires of the test battery unanswered, or did not visibly respond to them incorrectly (e.g., straight-lining, that is, responding with the same answers to all questions). Out of the 172 people we contacted in the community sample, 158 (91.86%) participants provided enough valid data to be included in the data analysis. The demographic and clinical characteristics of the final sample can be observed in Table 6.

There were no significant differences between the two groups in demographic data (gender, age, education level, marital, and socioeconomic status), $p > .05$. Cancer patients had no more participants with diagnosed non-severe mental disorders (depression, anxiety, sleeping, and eating disorders), but more of them received psychological/psychiatric treatment as compared to HS, χ^2 (1, $N = 302$) = 15.41, $p < .001$. There were no differences in the number of religious participants between the groups, but more respondents in the cancer group practiced their religion on a weekly/daily basis, χ^2 (1, $N = 298$) = 19.34, $p < .001$.

4.6.2. Psychometric properties of the VLQ-PC

Cronbach alpha for the total Importance subscale was .73, .88 for the total Perceived Change in Importance, .81 for Personal Implication, .84 for the Perceived Change in Personal Implication, and .81 for the VLQ-PC composite. The intraclass correlation coefficients (ICC) for each of the subscales after were: .87 for the total Importance, .85 for the total Perceived Change in Importance, .78 for Personal Implication, .83 for the Perceived Change in Personal Implication, and .86 for the VLQ-PC composite. These data indicate that the test-retest reliability of the VLQ-PC was excellent.

To analyze the concurrent and convergent validity of the valued areas of VLQ-PC, we compared them with the personal values of PVQ and the sources of meaning of PMP-B in the total sample (Table 7 and Table 8). Importance and implication in Family (other than parenting and intimate relations) showed positive correlations with the subscales of Conformity, Tradition, and Benevolence of PVQ, and the subscale of Relationship of PMP-B ($p > .05$). The domain Partner/Intimate relations was associated with Tradition, Benevolence (PVQ), and particularly with the subscale of Intimacy (PMP-B).

Table 7. Intercorrelations between *Importance* scores in VLQ-PC areas, PMP-B sources of meaning, and PVQ values in the total sample ($N = 302$).

	VLQ Family	VLQ Intimate relations	VLQ Parent.	VLQ Friend.	VLQ Work	VLQ Educat.	VLQ Recrea.	VLQ Spirit.	VLQ Citize.	VLQ Physic. Care	VLQ Myself
PMP-B Self-trans.	.059	-.026	-.064	.174**	.158**	.171**	.165**	.273**	.272**	.247**	.153**
PMP-B Achiev.	.026	.045	.009	.153**	.152**	.093	.172**	.110	.213**	.125*	.114*
PMP-B Relation.	.179**	.190**	.141*	.457**	.233**	.149**	.211**	.142*	.284**	.159**	.241**
PMP-B Religion	.078	.174**	.099	.114	.100	.092	.020	.553**	.267**	.185**	.076
PMP-B Self-acce.	.096	.169**	.027	.223**	.209**	.154**	.025	.207**	.294**	.229**	.150**
PMP-B Intimacy	.064	.560**	.221**	.123*	.011	.083	.150**	.112	.058	.033	.123*
PMP-B Fair treat.	.042	.150**	.022	.135*	.014	.022	.075	.185**	.080	.091	.129*
PVQ-Conformity	.211**	.168**	.180**	.106	.169**	.100	.011	.096	.202**	.133*	.035
PVQ-Tradition	.216**	.201**	.153*	.145*	.197**	.086	-.051	.288**	.206**	.162**	.015
PVQ-Benevolence	.243**	.164**	.211**	.355**	.233**	.165**	.176**	.177**	.284**	.231**	.103
PVQ-Universali.	.100	.091	.143*	.117*	.140*	.269**	.121*	.169**	.184**	.216**	.094
PVQ-Self-Direct.	.050	-.044	.013	.136*	.179**	.180**	.143*	.147*	.191**	.205**	.154**
PVQ-Stimulation	-.002	-.113	-.037	.162**	.111	.098	.220**	.139*	.181**	.154**	.154**
PVQ-Hedonism	.053	-.012	-.018	.234**	.021	.066	.402**	.104	.106	.230**	.262**
PVQ-Achievem.	.039	-.075	-.113	.043	.154**	.021	.106	-.044	.031	.056	.041
PVQ-Power	.018	-.070	-.160**	-.022	.046	-.021	.032	-.038	.008	-.090	-.026
PVQ-Security	.074	.126*	.121*	.113	.230**	.190**	.099	.182**	.226**	.324**	.165**

* $p < .05$; ** $p < .01$. Two-tailed.

Parenting correlated with Benevolence, Conformity, Tradition, Universalism (PVQ), Intimacy, and Relationship (PMP-B). Friendship was most related to Benevolence, Stimulation, Hedonism (PVQ), and Relationship (PMP-B). Work was associated with

Achievement, Security, Self-direction, Benevolence, Tradition, Conformity (PVQ), Self-transcendence, Achievement, Relationship, and Self-acceptance (PMP-B). Education showed stronger correlations with Universalism, Self-direction, Security (PVQ), Self-transcendence, Achievement, Relationship, and Self-acceptance (PMP-B). Recreation was most associated with Hedonism, Stimulation (PVQ), Relationship, and Achievement (PMP-B). Spirituality correlated most strongly with Tradition (PVQ), Religion, and Self-transcendence (PMP-B). Importance and personal implication in Citizenship were related to Conformity, Tradition, Benevolence, Universalism, Self-direction, Stimulation, Security (PVQ), Self-transcendence, Achievement, Relationship, Religion, and Self-acceptance. Physical self-care most correlated with Security, Hedonism, Benevolence (PVQ), and Self-acceptance (PMP-B). Finally, the domain of Myself showed the strongest associations with Self-direction, Stimulation, Hedonism, Security (PVQ), Relationship, and Self-acceptance (PMP-B).

The composite score of the VLQ-PC, which represents global valued living, was positively associated with meaning in life (PMP-B total) and mindfulness levels (MAAS) in the total sample. The VLQ-PC composite explained 20.4% of the variance of PMP-B and 8% of the variance of MAAS. In general, these results provide evidence of the concurrent and convergent validity of the VLQ-PC scores to measure personal values and valued living. Other indicators of validity evidence of VLQ-PC (including the perceived changes) based on relations with other variables are presented below.

The composite score of the VLQ-PC, which represents global valued living, was positively associated with meaning in life (PMP-B total, $r = 472$, $p < .001$) and mindfulness levels (MAAS, $r = 306$, $p < .001$) in the total sample. The VLQ-PC composite explained 20.4% of the variance of PMP-B and 8% of the variance of MAAS.

In general, these results provide evidence of the concurrent and convergent validity of the VLQ-PC scores to measure personal values and valued living. Other indicators of validity evidence of VLQ-PC (including the perceived changes in values) based on relations with other variables are presented below.

Table 8. Intercorrelations between *Personal Implication* scores in VLQ-PC areas, PMP-B sources of meaning, and PVQ values in the total sample ($N = 302$).

	VLQ Family	VLQ Intimate relations	VLQ Parent.	VLQ Friend.	VLQ Work	VLQ Educat.	VLQ Recrea.	VLQ Spirit.	VLQ Citize.	VLQ Physic. Care	VLQ I/mys.
PMP-B Self-trans.	.059	.060	.031	.166**	.119*	.169**	.130*	.250**	.236**	.116*	.147*
PMP-B Achiev.	.070	.102	.077	.131*	.110	.186**	.165**	.067	.192**	.118*	.165**
PMP-B Relation.	.200**	.234**	.203**	.344**	.117*	.143*	.177**	.134*	.338**	.183**	.226**
PMP-B Religion	.189**	.232**	.135*	.157**	.030	.101	.052	.606**	.238**	.187**	.195**
PMP-B Self-acce.	.176**	.217**	.098	.189**	.057	.144*	.131*	.155**	.248**	.229**	.202**
PMP-B Intimacy	.030	.527**	.240**	.039	.019	.005	.002	.140*	.077	.100	.071
PMP-B Fair treat.	.009	.145*	.021	.104	.043	.088	.096	.172**	.103	.128*	.181**
PVQ-Conformity	.205**	.151*	.142*	.137*	-.012	-.045	.055	.151**	.187**	.111	.077
PVQ-Tradition	.190**	.153**	.194**	.186**	-.070	.044	.069	.366**	.257**	.138*	.144*
PVQ-Benevolence	.267**	.160**	.240**	.312**	.006	.072	.165**	.161**	.313**	.218**	.130*
PVQ-Universali.	.173**	.098	.188**	.121*	.000	.184**	.131*	.228**	.275**	.186**	.134*
PVQ-Self-Direct.	.057	-.001	.099	.131*	-.011	.170**	.041	.139*	.199**	.159**	.244**
PVQ-Stimulation	.020	-.052	-.037	.169**	-.014	.051	.166**	.056	.181**	.099	.174**
PVQ-Hedonism	.088	-.006	-.029	.298**	.008	.097	.327**	.107	.218**	.218**	.274**
PVQ-Achievem.	.023	.056	-.032	.098	.152**	.108	.066	-.040	.109	.009	.068
PVQ-Power	-.053	-.068	-.050	-.038	.030	.017	-.044	.015	.034	-.084	-.006
PVQ-Security	.122*	.099	.098	.168**	.077	.160**	.121*	.236**	.236**	.203**	.159**

* $p < .05$; ** $p < .01$. Two-tailed.

4.6.3. Group comparisons on meaning in life, personal values, and trait mindfulness

Average data and statistical comparisons between cancer patients and their healthy counterparts can be observed in Tables 9 and 10. PMP-B total scores were significantly higher among cancer patients than in healthy adults, showing generally higher levels of meaning in life among participants with cancer. Respondents in the cancer group scored higher on the subscales of Religion and Self-acceptance of the PMP-B. As for the basic values measured by the PVQ, cancer patients scored higher in Benevolence and Tradition than the control group.

In the case of the VLQ-PC, both importance and personal implication in Spirituality and Physical self-care were significantly higher in the cancer patient group than in the control group, while importance and implication in Work were lower (see Table 10).

Implication in the domain of Myself were also higher in the cancer group. However, we found no significant differences between groups in the VLQ-PC composite, $p > .05$. Likewise, no differences were observed in MAAS scores, $p > .05$.

4.6.4. Perceived change in personal values

Regarding the retrospective version of PVQ, cancer patients reported that in comparison with their situation before the cancer diagnosis, in the present they valued more Universalism, $Z = -2.71$, $p = .007$, while they gave less importance to Stimulation, $Z = -2.44$, $p = .015$, and Power, $Z = -2.14$, $p = .032$. These values did not show significant intra-group differences in healthy adults. However, in the control group, Self-direction, $Z = -2.25$, $p = .025$, Hedonism, $Z = -2.91$, $p = .004$, and Security, $Z = -3.99$, $p = .015$, were significantly higher in the present than one year before. At an inter-group level, differences between past and present values were significantly higher in the cancer group than in the control group in the case of Stimulation, Achievement (cancer patients valued it less in the present, while the control group valued more over time), and Power. However, effect sizes were small (see Table 9).

As for the perceived changes of the VLQ-PC, cancer patients showed significant increases in the importance of areas such as Family, Partner, Parenting, Friendship, Recreation, Spirituality, Citizenship, Physical self-care, and Myself since the diagnosis, as compared to healthy adults (see Table 10 and Figure 2). The importance of Work significantly decreased in cancer, and perceived changes in the importance of Education were the same in both groups. Size effects for the perceived change in the importance of Family, Parenting, Friendship, Spirituality, and Myself were medium, while the rest of the size effects were small (Table 9).

Similarly, cancer patients perceived a higher increase of personal implication in Family, Partner/Intimate relationships, Parenting, Friendship, Recreation, Spirituality, Physical self-care, and Myself than the control group. Changes of personal implication in Work also significantly differed between groups (for cancer patients decreased while for healthy adults increased).

Table 9. Descriptive statistics and comparisons of meaning, values, and mindfulness between cancer patients and the control group.

	Cancer patients ***M* (*SD*); *Mdn***	**Community sample** ***M* (*SD*); *Mdn***	***U***	***p***	***r***
PMP-B Self-transcendence	12.90 (3.88); 13	12.56 (3.43); 13	10856.0	.491	.04
PMP-B Achievement	13.53 (3.95); 14	13.11 (3.83); 13	10703.0	.373	.05
PMP-B Relationship	15.86 (3.84); 16	15.48 (3.58); 16	10481.5	.236	.07
PMP-B Religion	10.01 (5.48); 9	8.00 (5.15); 6.25	8800.0	.001	.20
PMP-B Self-acceptance	15.47 (3.37); 15	14.12 (3.39); 14	8818.0	.001	.20
PMP-B Intimacy	16.20 (5.33); 18	16.42 (5.03); 18.13	11227.5	.843	.01
PMP-B Fair treatment	14.02 (3.66); 14	13.42 (3.57); 13.5	10250.0	.136	.09
PMP-B Total	98.04 (18.30); 98.3	93.11 (16.29); 94.7	9729.5	.030	.13
PVQ-Conformity	16.94 (3.74); 18	16.21 (3.56); 17	10059.5	.081	.10
PVQ-Tradition	15.49 (3.57); 16	14.17 (3.44); 14	8965.5	.001	.18
PVQ-Benevolence	19.70 (3.14); 20	19.03 (3.16); 19	9880.0	.047	.11
PVQ-Universalism	29.56 (4.38); 30	29.58 (4.72); 30	11064.0	.680	.02
PVQ-Self-Direction	18.95 (3.66); 19	18.53 (3.53); 19	10409.5	.201	.07
PVQ-Stimulation	10.72 (3.56); 11	10.02 (3.50); 10	10234.5	.131	.09
PVQ-Hedonism	12.48 (3.56); 12.2	12.043 (3.47); 12	10450.0	.220	.07
PVQ-Achievement	12.20 (4.84); 12	12.25 (4.05); 12	11026.5	.644	.03
PVQ-Power	7.11 (3.07); 7	7.32 (2.70); 7	10814.0	.456	.04
PVQ-Security	22.07 (5.02); 23	22.46 (4.54); 23	11120.0	.735	.02
PastPVQ-Conformity	17.24 (3.74); 18	16.36 (3.45); 17	9632.5	.021	.13
PastPVQ-Tradition	15.52 (3.59); 15.5	14.23 (3.73); 14	9149.5	.003	.17
PastPVQ-Benevolence	19.42 (3.14); 20	18.73 (3.39); 19	9988.5	.066	.11
PastPVQ-Universalism	28.92 (4.68); 29	29.01 (4.90); 29.5	11080.5	696	.02
PastPVQ-Self-Direction	18.84 (3.64); 19	18.15 (3.32); 18	9878.5	.047	.11
PastPVQ-Stimulation	11.26 (3.96); 11	9.76 (3.41); 10	8852.5	.001	.19
PastPVQ-Hedonism	12.34 (3.76); 13	11.55 (3.74); 11	9859.5	.045	.12
PastPVQ-Achievement	12.75 (5.43); 12	11.97 (4.15); 11.8	10802.5	.448	.04
PastPVQ-Power	7.58 (3.72); 7	7.22 (2.99); 7	11132.0	.746	.02
PastPVQ-Security	21.64 (5.11); 22.5	21.85 (4.97); 23	11266.5	.885	.01
DifferencePVQ-Conformity	-.30 (2.26); .0	-.15 (2.34); .0	10578.0	.285	.06
DifferencePVQ-Tradition	-.03 (2.73); .0	-.06 (2.4); .0	11343.0	.965	.00
DifferencePVQ-Benevolence	.28 (2.46); .0	.29 (1.86); .0	11350.5	.972	.00
DifferencePVQ-Universalism	.64 (2.84); .0	.57 (3.03); .0	10558.0	.275	.06
DifferencePVQ-self-direction	.11 (2.99); .0	.38 (2.43); .0	11101.5	.712	.02
DifferencePVQ-Stimulation	-.54 (2.35); .0	.26 (2.18); .0	9417.5	.008	.15
DifferencePVQ-Hedonism	.14 (2.98); .0	.49 (2.50); .0	10684.0	.351	.05
DifferencePVQ-Achievement	-.55 (3.43); .0	.28 (2.48); .0	9843.0	.041	.12
DifferencePVQ-Power	-.47 (2.34); .0	.11 (1.96); .0	9655.5	.020	.13
DifferencePVQ-Security	.44 (2.93); .0	.61 (2.86); .0	10680.0	-352	.05
MAAS	4.47 (.93); 4.6	4.50 (.83); 4.6	11320.5	.942	.00

Note: PastPVQ = PVQ scores before the cancer diagnosis/one year before; DifferencePVQ = Differential scores between PVQ and PastPVQ.

Table 10. Descriptive statistics and group comparisons of the VLQ-PC scores.

	Cancer patients *M* (*SD*); *Mdn*	**Control group** *M* (*SD*); *Mdn*	*U*	*p*	*r*
VLQ Importance Family	9.13 (1.57); 10	8.96 (1.77); 10	10674.0	.345	.05
VLQ Importance Marriage	8.69 (2.26); 10	8.59 (2.44); 10	10818.0	.982	.00
VLQ Importance Parenting	9.24 (1.90); 10	9.23 (2.05); 10	9427.0	.502	.04
VLQ Importance Social Life	7.70 (1.90); 8	7.56 (1.85); 8	10416.5	.425	.05
VLQ Importance Work	7.53 (2.41); 8	8.18 (2.00); 9	9283.5	.018	.14
VLQ Importance Education	7.85 (2.05); 8	8.27 (1.65); 9	10051.5	.134	.09
VLQ Importance Recreation	7.62 (2.05); 8	7.51 (1.65); 8	9970.0	.218	.07
VLQ Importance Spirituality	6.69 (2.82); 7	5.82 (2.74); 6	8924.0	.004	.17
VLQ Importance Citizenship	7.15 (2.05); 7	6.84 (1.84); 7	9783.0	.140	.09
VLQ Importance Physical self-care	7.79 (2.02); 8	7.33 (2.04); 8	93.89.5	.027	.13
VLQ Importance Myself	8.02 (1.98); 8	7.96 (1.94); 8	10853.0	.70	.02
VLQ Import. Change Family	2.24 (2.09); 4	.64 (1.49); .0	6261.5	< .001	.43
VLQ Import. Change Marriage	1.78 (2.30); 3	.56 (1.60); .0	7295.5	< .001	.29
VLQ Import. Change Parenting	2.17 (2.09); 4	.71 (1.46); .0	6185.0	< .001	.38
VLQ Import. Change Social Life	1.37 (2.06); 1	.40 (1.31); .0	7473.0	< .001	.31
VLQ Import. Change Work	-.26 (2.40); .00	.46 (1.64); .0	8971.5	< .001	.16
VLQ Import. Change Education	.61 (2.06); .00	.60 (1.37); .0	10856.5	.769	.02
VLQ Import. Change Recreation	1.35 (2.00); 2	.43 (1.32); .0	7661.5	< .001	.27
VLQ Import. Change Spirituality	1.36 (2.06); 1	.08 (1.29); .0	6696.0	< .001	.38
VLQ Import. Change Citizenship	.72 (1.78); .0	.36 (1.12); .0	9347.0	.010	.15
VLQ Import. Change Physical self-care	1.80 (1.97); 2	.89 (1.53); .0	7631.5	< .001	.27
VLQ Import. Change Myself	2.12 (1.92); 2	.89 (1.49); .0	6533.0	< .001	.37
VLQ Implication Family	8.15 (2.01); 9	7.84 (2.37); 8	10762.5	.466	.04
VLQ Implication Marriage	7.47 (2.89); 8	7.27 (3.10); 8.5	10156.5	.731	.02
VLQ Implication Parenting	8.21 (2.65); 9	7.84 (3.12); 9	9252.0	.680	.03
VLQ Implication Social Life	6.72 (2.52); 7	6.44 (2.11); 7	9884.5	.107	.09
VLQ Implication Work	4.81 (3.19); 5	7.59 (2.68); 8	5421.0	< .001	.43
VLQ Implication Education	5.38 (3.06); 5	6.48 (2.62); 7	8742.0	.002	.18
VLQ Implication Recreation	6.00 (2.74); 6	6.04 (2.11); 6	10559.0	.628	.03
VLQ Implication Spirituality	5.79 (3.11); 6	4.59 (3.03); 5	8751.5	.001	.19
VLQ Implication Citizenship	5.54 (2.67); 5	5.44 (2.50); 5	10566.5	.775	.17
VLQ Implication Physical self-care	7.28 (2.43); 8	6.20 (2.57); 7	8320.0	< .001	.22
VLQ Implication Myself	7.88 (2.33); 9	6.79 (2.43); 7	7745.0	< .001	.25
VLQ Implic. Change Family	1.99 (1.90); 2	.63 (1.62); .0	6743.0	< .001	.36
VLQ Implic. Change Marriage	1.55 (2.14); 1.5	.55 (1.71); .0	7250.5	< .001	.28
VLQ Implic. Change Parenting	1.69 (1.99); 2	.68 (1.61); .0	6685.5	< .001	.29
VLQ Implic. Change Social Life	.82 (1.97); 0	.26 (1.29); .0	8935.5	.002	.18
VLQ Implic. Change Work	-.86 (2.21); 0	.51 (1.76); .0	7016.0	< .001	.29
VLQ Implic. Change Education	-.01 (2.16); 0	.43 (1.46); .0	10025.0	.190	.08
VLQ Implic. Change Recreation	.52 (2.31); 0	.24 (1.35); .0	9566.0	.031	.13
VLQ Implic. Change Spirituality	.73 (2.20); 0	-.21 (1.48); .0	7197.0	< .001	.33
VLQ Implic. Change Citizenship	.26 (1.95); 0	.19 (1.02); .0	9975.5	.175	.08
VLQ Implic. Change Physical self-care	1.66 (2.10); 2	.67 (1.43); .0	7025.0	< .001	.32
VLQ Implic. Change Myself	2.00 (1.87); 2	.59 (1.53); .0	6042.5	< .001	.41
VLQ Importance total	7.92 (1.25); 8	7.84 (.95); 7.9	10377.0	.187	.08
VLQ Importance Change total	1.39 (1.36); 1.6	.58 (1.08); .2	6703.0	< .001	.36
VLQ Implication total	6.65 (1.65); 6.9	6.55 (1.64); 6.7	10942.0	.638	.03
VLQ Implication Change total	.94 (1.26); 1.0	.42 (.97); .0	7769.5	< .001	.27
VLQ Composite	56.50 (17.90); 57.6	55.63 (16.19); 55.5	10874.5	.575	.03

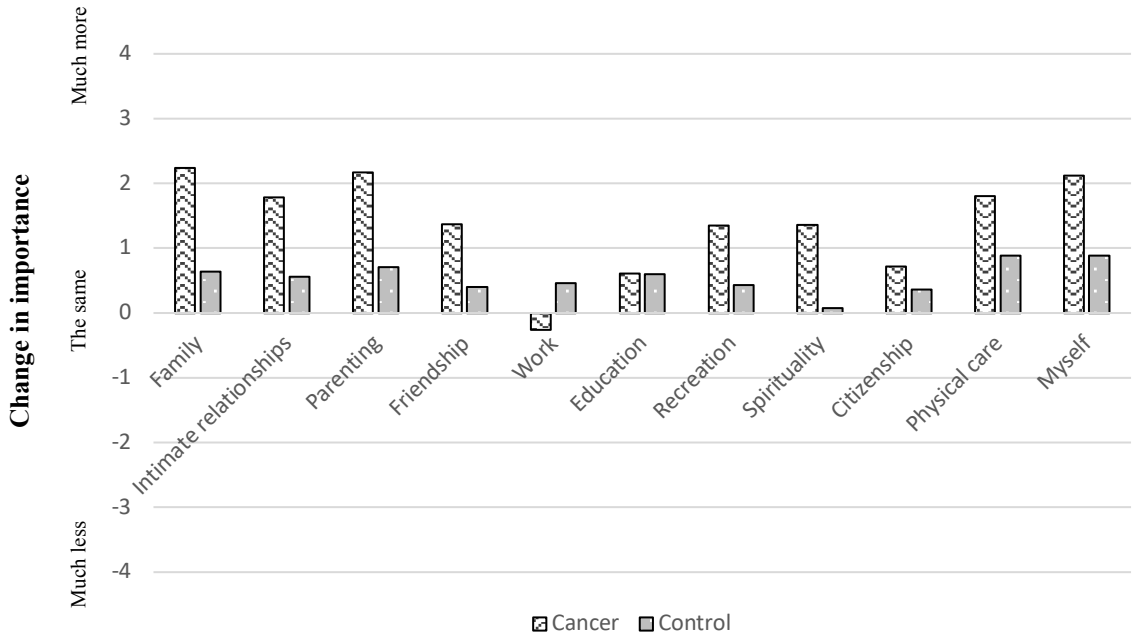

Figure 2. Graphic representation of the perceived changes in personal values in VLQ-PC (Importance). All differences between groups were significant, except for Education.

Finally, perceived changes in the implication in Education and Citizenship were not significantly different among groups (Table 10). Overall, cancer patients reported a total increase of importance and implication in the VLQ-PC life areas higher than the control group, with medium effect sizes (see Table 10).

Of note, among cancer patients, none of the differences in values of PVQ nor perceived changes in valued areas of VLQ-PC was significantly related to trait mindfulness (MAAS), $p > .05$.

4.6.5. Relations with quality of life and spiritual well-being in cancer

We also examined the relationships between meaning in life, personal values, and quality of life within the cancer patient group. Time passed since diagnosis was not related to any component of quality of life (FACIT-Sp), meaning in life (PMP-B), personal values (PVQ and total VLQ-PC importance), personal implication, global valued living, nor perceived changes in the valued areas (VLQ-PC), $p > .05$. We only observed that time passed since the diagnosis was positively associated with the importance and the perceived increase in importance of Spirituality ($r = .214$, $p = .014$; $r = .227$, $p = .009$, respectively). Likewise, cancer stage was not related to meaning in life, global valued living, any perceived change in values and implication, the majority of sources of meaning, nor values measured by PVQ, $p > .05$. However, more advanced stages of the illness were negatively correlated with Self-acceptance ($r = -.172$, $p = .046$), Benevolence ($r = -.212$, $p = .013$), global quality of life (FACIT-SP total, $r = -.209$, $p = .017$), Spiritual well-being ($r = -.206$, $p = .016$), Meaning/peace (component of Spiritual Well-being), and Functional well-being ($r = -.193$, $p = .025$).

All sources of meaning were positively associated with FACIT-Sp total scores, particularly with the subscales of Spiritual well-being (see Table 11). These sources of meaning also correlated with Social or Functional well-being, with the exception of Religion, which did not correlate with any of these aspects of quality of life. Regarding the PVQ values, we found no relationship with FACIT-Sp total scores. However, Benevolence, Tradition, Self-direction, Universalism, and Security were positively related to Spiritual well-being. Social well-being also showed several associations with PVQ values such as Benevolence, Hedonism, Self-direction, and Universalism. Linear regression analysis indicated that PMP-B and PVQ together explained 21% of the variance of FACIT-SP total.

Valued areas of VLQ-PC positively associated with FACIT-Sp total scores were Parenting, Friendship, Recreation, Spirituality, Citizenship, Physical self-care, and Myself (Table 11). Spiritual well-being was most related to importance to Spirituality, Citizenship, Myself, and Education. Social well-being was most associated with importance of Myself, Partner/Intimate relationship, Friendship, Recreation, Parenting, and Work. All valued areas of VLQ-PC showed significant positive relationships with the PMP-B total, except

Family and Parenting. Moderate correlations were observed with PMP-B total in the case of Spirituality and Citizenship.

Areas in which personal implication was most associated with FACIT-Sp total score were Recreation, Citizenship, Myself, and Friendship, respectively (Table 11). Spiritual well-being was most associated with implication in Spirituality, Citizenship, and Myself. Social well-being showed the strongest correlations with implication in Partner/Intimate relationships, Friendship, Citizenship, Parenting, and Myself. Concerning the relations with PMP-B total score, implication in Citizenship, Spirituality, and Partner/Intimate relationships showed the greatest associations.

The VLQ total composite was positively related to all the subscales of the FACIT-Sp, except for Emotional well-being (Table 11). Moderate correlations were found between the VLQ-PC composite, FACIT-Sp total, FACT-G, Functional well-being, Social well-being, and PMP-B total. These results represent incremental evidence of the convergent validity of the VLQ-PC composite as a measure of valued living.

Total perceived change in importance (VLQ-PC) since diagnosis was not related to the FACIT-Sp total score, but it showed positive associations with Spiritual well-being, being particularly more correlated with the faith component, as well as with the total PMP-B (Table 11). Otherwise, total perceived change in personal implication was positively associated with the FACIT-Sp total score, Spiritual well-being, Functional well-being, Emotional well-being, and PMP-B total. Linear regression analysis showed that together with the VLQ-PC composite, the total perceived change in importance, and the total perceived change in personal implication, explained 28.4% of the variance of the FACIT-SP total, more than using only the VLQ-PC composite (18.8%), the measure proposed by the original authors.

Finally, linear regression analysis indicated that all subscales of PMP-B, PVQ, and VLQ-PC together explained 38.1% of FACIT-SP total variance. The VLQ-PC composite and the total perceived change in implication were the subscales that most predict quality of life ($\beta = .294$, $p = .001$; $\beta = .436$, $p < .001$, respectively). In general, these findings highlight the centrality of meaning in life, valued living, and meaning adaptability in quality of life.

Table 11. Correlations between well-being areas, sources of meaning, values, and mindfulness in the cancer group (n = 144).

	PMP-B	Physi. WB	Social WB	Emot. WB	Funct. WB	Mean. /peace	faith	Spirit. WB	FACIT -G	FACIT -SP total
PMP-B Self-transcendence	.664**	-.053	.141	.168	.251**	.254**	.209*	.266**	.178*	.251**
PMP-B Achievement	.666**	.063	.171*	.139	.270**	.327**	.109	.269**	.232**	.260**
PMP-B Relationship	.573**	.018	.451**	-.033	.231**	.371**	.123	.310**	.219*	.290**
PMP-B Religion	.568**	.101	.002	.111	.054	.028	.624**	.381**	.084	.225*
PMP-B Self-acceptance	.566**	-.018	.194*	.157	.246**	.359**	.279**	.363**	.187*	.276**
PMP-B Intimacy	.550**	.075	.441**	-.042	.140	.156	.194*	.229**	.210*	.237**
PMP-B Fair treatment	.682**	.210*	.265**	.211*	.310**	.269**	.081	.218*	.349**	.364**
PMP-B Total	1.000	.120	.399**	.173*	.342**	.358**	.379**	.443**	.358**	.447**
PVQ-Conformity	.277**	-.085	.103	-.171*	-.083	.001	.076	.018	-.093	-.069
PVQ-Tradition	.327**	.036	.030	-.125	-.065	.069	.310**	.202*	-.059	.026
PVQ-Benevolence	.385**	-.045	.285**	-.020	.142	.288**	.185*	.268**	.089	.165
PVQ-Universalism	.377**	-.099	.216*	-.059	.073	.180*	.131	.191*	.012	.086
PVQ-Self-Direction	.386**	-.131	.236**	.031	.104	.239**	.065	.193*	.039	.079
PVQ-Stimulation	.499**	-.072	.134	-.009	.173*	.098	.085	.107	.055	.073
PVQ-Hedonism	.364**	-.011	.270**	.021	.207*	.119	.063	.109	.125	.144
PVQ-Achievement	.411**	.057	.133	.011	.149	.064	.091	.094	.111	.123
PVQ-Power	.311**	-.019	.005	.094	.037	-.025	.008	-.007	.015	.016
PVQ-Security	.434**	-.038	.135	-.043	.062	.126	.204*	.186*	.032	.119
MAAS	.060	.132	.093	.141	.195*	.285**	.184*	.305**	.170	.232**
VLQ-PC Import. Family	.143	.084	.212*	-.170	.149	.103	.171*	.145	.115	.120
VLQ-PC Import. Intimate rel.	.282**	.018	.363**	-.129	.109	.029	.075	.053	.156	.149
VLQ-PC Import. Parenting	.125	.168	.266**	-.055	.173	.078	.077	.110	.215*	.205*
VLQ-PC Import. Social Life	.258**	.257**	.321**	.038	.307**	.172*	.145	.199*	.329**	.320**
VLQ-PC Import, Work	.251**	.041	.254**	-.113	.025	.091	.088	.087	.067	.078
VLQ-PC Import. Education	.236**	.017	.155	-.018	.062	.178*	.222*	.256**	.032	.091
VLQ-PC Import. Recreation	.222*	.229**	.280**	-.011	.201*	.115	-.001	.079	.291**	.248**
VLQ-PC Import. Spirituality	.474**	.021	.054	.020	.144	.149	.520**	.387**	.118	.228**
VLQ-PC Import. Citizenship	.425**	.244**	.214*	.117	.281**	.284**	.272**	.324**	.323**	.382**
VLQ-PC Import. Physical care	.273**	.124	.203*	-.073	.184*	.150	.127	.164	.195*	.208*
VLQ-PC Import. Myself	.281**	.157	.388**	.054	.267**	.290**	.233**	.308**	.335**	.387**
VLQ-PC Implica. Family	.087	.049	.262**	-.127	.113	.075	.112	.115	.087	.096
VLQ-PC Implica. Intimate rel.	.343**	.137	.468**	-.002	.120	-.021	.145	.094	.238**	.206*
VLQ-PC Implica. Parenting	.094	.061	.315**	-.040	.080	.099	.092	.144	.107	.139
VLQ-PC Implica. Social Life	.267**	.239**	.367**	.111	.311**	.221*	.153	.228**	.316**	.335**
VLQ-PC Implica, Work	.146	.182*	.166	.113	.293**	.004	.036	.019	.273**	.243**
VLQ-PC Implica. Education	.133	.158	.123	.109	.212*	.169	.180*	.224*	.188*	.211*
VLQ-PC Implica. Recreation	.214*	.345**	.263**	.205*	.472**	.289**	.135	.265**	.457**	.446**
VLQ-PC Implica. Spirituality	.361**	.095	.002	.058	.144	.097	.547**	.381**	.107	.218*
VLQ-PC Implica. Citizenship	.375**	.291**	.320**	.103	.354**	.318**	.263**	.349**	.364**	.421**
VLQ-PC Implica. Physical care	.262**	.125	.261**	-.063	.117	.146	.144	.185*	.189*	.232**
VLQ-PC Implica. Myself	.230**	.187*	.314**	.075	.210*	.303**	.194*	.308**	.305**	.366**
VLQ-PC Composite	.405**	.301**	.445**	.059	.406**	.279**	.308**	.372**	.423**	.465**
VLQ-PC Import. Change total	.292**	.068	.025	.114	.032	-.028	.375**	.202*	.094	.150
VLQ-PC Implica. Change total	.350**	.146	.104	.194*	.246**	.159	.416**	.338**	.232**	.310**

Note: * $p < .050$; ** $p < .001$. All p values are two-tailed.

4.6.6. Cluster analysis among cancer patients based on meaning adaptability

To study in more detail the relationships between valued living, meaning adaptability, and quality of life, we performed a cluster analysis. We assessed whether respondent profiles of cancer patients based on importance, personal implication, perceived change in importance, and perceived change in implication in the areas of VLQ-PC could have different characteristics. The cluster analysis yielded to a three cluster solution as it had the best characteristics among the tested solutions (2, 3, 4, and 5) that is, lowest AIC and greater AIC change accompanied with a silhouette coefficient of 0.50, indicating an overall good fit of the model (full dataset available upon request). The most discriminative predictor variable was personal implication (importance = 1.00), followed by perceived change in implication (importance = .74), perceived change in importance (importance = .67), and total importance to the life areas (importance = .67).

Table 12 depicts the characteristics of the three clusters. Cluster 1 (34.3%) had low mean values for all four variables; that is, they showed low levels of perceived changes in values and generally reported low importance and low personal implication towards life areas included in the VLQ-PC. We named Cluster 1 patients with *inflexible low-meaning* because they indicated inflexibility in the system of values and low levels of meaningful living. Participants in Cluster 2 (31.10%) perceived low changes in importance and personal implication, but showed present high levels of importance and implication in valued areas. We decided to name Cluster 2 as patients with *inflexible high-meaning*. Finally, Cluster 3 (35.7%) reported significant perceived changes in both the importance and implication towards their valued areas, as well as present high levels of both importance and implication. Thus, Cluster 3 was named patients with *adaptive high-meaning* since they indicated adaptability in their system of values and high levels of meaningful living. All evaluation variables significantly differed between the groups (see Table 12).

Table 13 shows means, medians, standard variations, and overall differences between the three groups. Chi-square tests were only significant in case of religious status. Post-hoc analyses showed that significantly fewer participants were religious in the

inflexible low-meaning group than in the *inflexible high-meaning* group (p = .012) and the *adaptive high-meaning* group (p = .004).

Significant differences were also detected between the three groups regarding PMP-B total scores, all PMP-B subscales (except for Fair Treatment), PVQ subscales of Tradition, Benevolence, Self-Direction, Stimulation, Hedonism, and Security, FACIT-Sp total scores and all FACIT-Sp subscales, except Emotional well-being. Notably, no differences were observed based on cancer stage, type and time elapsed since diagnosis. The main statistics showed significant differences in age, but post-hoc analyses did not show differences between the clusters (see Table 13 and 14).

Further post-hoc pair-wise group comparisons showed clear psychological benefits of having *adaptive high-meaning* as compared to *inflexible low-meaning* and *inflexible high-meaning* (see Table 14 and Figure 3). Patients with *inflexible high-meaning* showed higher scores than patients with *inflexible low-meaning* in the FACIT-SP total, FACT-G, Social well-being, Functional well-being, and the PMP-B subscale of Relationship. However, patients with *adaptive high-meaning* showed higher scores than those with *inflexible low-meaning* in the FACIT-Sp total, FACT-G, Social well-being, Functional well-being, Spiritual well-being, meaning in life (PMP-B total and all its subscales), and the PVQ values of Tradition, Benevolence, Stimulation, Hedonism, and Security. Compared to patients with *inflexible high-meaning*, the *adaptive high-meaning* group indicated higher scores in Physical well-being, meaning in life, Self-transcendence, and Achievement (PMP-B), Self-direction, and Stimulation (PVQ).

Table 12. Classification of variables in the three clusters of cancer patients.

	Cluster 1 (*n* = 51) *M* (*SD*); *Mdn*	**Cluster 2 (*n* = 43) *M* (*SD*); *Mdn***	**Cluster 3 (*n* = 49) *M* (*SD*); *Mdn***	***Kruskal -Wallis h***	***p***
VLQ-PC Importance	6.76 (1.17); 7.00	8.44 (.70); 8.36	8.58 (.81); 8.73	68.47	< .001
VLQ-PC Importance change	1.07 (1.26); 1.18	.35 (.90); .18	2.55 (.82); 2.40	72.48	< .001
VLQ-PC Dedication	4.88 (1.04); 4.81	7.57 (1.00); 7.36	7.56 (1,12); 7.45	86.17	< .001
VLQ-PC Dedication change	.36 (1.15); .64	.21 (.70); 12	2.12 (.80); 2.00	78.94	< .001

Table 13. Descriptive statistics and comparisons of meaning, values, mindfulness, and well-being between the three clusters of cancer patients.

	Cluster 1 ***Inflexible low-meaning*** **(*n* = 49)** ***M* (*SD*); *Mdn***	**Cluster 2** ***Inflexible high-meaning*** **(*n* = 43)** ***M* (*SD*); *Mdn***	**Cluster 3** ***Adaptive high-meaning*** **(*n* = 51)** ***M* (*SD*); *Mdn***	***Kruskal-Wallis /Chi square***	***p***
Age	50.10 (9.54); 53	50.40 (11.07); 49	45.86 (9.88) ; 45	7.26	.027
Gender (female; *n*, %)	28 (517.1)	23 (53.5)	36 (70.6)	3.29	.193
Religious (*n*, %)	32 (65.3)	35 (81.4)	45 (88.2)	9.29	.010
Religious practice (*n*, %)	38 (77.6)	26 (60.5)	35 (68.6)	3.17	.205
Time since diagnosis	18.38 (17.64); 11	17.23 (17.14); 13	19.32 (19.18); 9	.09	.957
In active treatment (*n*, %)	35 (71.4)	33 (76.7)	33 (64.7)	1.52	.468
PMP-B Self-transcend.	12.09 (3.8); 12	11.92 (3.78); 12	14.58 (3.54); 15	13.12	.001
PMP-B Achievement	12.59 (4.38); 12	12.63 (3.51); 13	15.19 (3.39); 16	14.10	.001
PMP-B Relationship	13.97 (3.92); 14	16.19 (3.24); 16	17.53 (3.36); 18	25.89	< .001
PMP-B Religion	8.23 (5.53);6	9.91 (5.45); 9	11.73 (4.79); 12	12.33	.002
PMP-B Self-acceptance	14.90 (3.65); 15	14.78 (3.35); 15	16.49 (2.81); 17	7.95	.019
PMP-B Intimacy	14.51 (5.60); 16	16.80 (5.00); 19	17.60 (4.63); 20	12.31	.002
PMP-B Fair treatment	13.27 (3.40); 13	14.10 (3.30); 14	14.55 (4.03); 15	3.60	.165
PMP-B Total	89.55 (18.03); 86	96.33 (18.62); 95	107.66 (13.66); 106	28.04	< .001
PVQ-Conformity	16.61 (3.88); 17.9	16.33 (3.49); 17	17.69 (3.73); 19	4.89	.087
PVQ-Tradition	14.44 (3.17); 15	15.67 (3.46); 16	16.35 (3.87); 17	6.57	.037
PVQ-Benevolence	18.76 (3.09); 19	19.59 (2.89); 20	20.69 (3.18); 22	11.48	.003
PVQ-Universalism	29.21 (4.12); 29.7	28.69 (4.51); 29	30.69 (4.38); 31	5.67	.059
PVQ-Self-Direction	18.53 (3.93); 19	18.15 (3.44); 19	20.01 (3.43); 21	8.09	.018
PVQ-Stimulation	10.11 (3.58); 10	9.42 (3.33); 9	12.30 (3.09); 12	17.62	< .001
PVQ-Hedonism	11.028 (3.61); 11	12.44 (3.15); 12	13.83 (3.34); 14.2	15.60	< .001
PVQ-Achievement	11.37 (5.78); 11	11.33 (3.98); 12	13.64 (5.26); 13	5.97	.051
PVQ-Power	7.17 (3.15); 7	6.44 (2.49); 6	7.58 (3.38); 7	2.51	.286
PVQ-Security	20.61 (5.05); 21	21.72 (5.21); 23	23.67 (4.43); 24	9.60	.008
MAAS	4.37 (7.31); 4.5	4.68 (.91); 4.8	4.44 (.94); 4.5	4.34	.114
Physical well-being	17.47 (7.30); 19	21.16 (5.77); 23	20.73 (6.15); 22	7.72	.021
Social well-being	18.82 (4.87); 18	22.43 (3.21); 23	22.15 (3.55); 21	17.48	< .001
Emotional well-being	15.02 (5.49); 17	14.98 (4.43);15	16.59 (4.41); 17	3.27	.195
Functional well-being	14.28 (5.36)	18.01 (4.95); 19	18.64 (5.65);19	16.73	< .001
Meaning-Peace	22.18 (5.95); 23	24.07 (4.46); 25	25.33 (4.73);26	7.78	.020
Faith	7.00 (4.45); 6	8.21 (4.22); 8	10.07 (4.15); 11	13.57	.001
Spiritual well-being	29.17 (8.52); 29	32.28 (7.32); 32	35.40 (6.91); 36	15.24	< .001
FACT-G	65.58 (15.93); 68	76.57 (13.42); 80	78.11 (15.19); 80	16.96	< .001
FACIT-SP	94.76 (20.51); 95	108.8 (18.7); 110	113.51 (18.7); 114	20.54	< .001

Note: For continuous variables, Kruskall-Wallis tests, for categorical variables, chi square tests were applied.

Table 14. Post-hoc Dunn tests for continuous variables in cancer.

	Inflexible low-meaning vs Inflexible high-meaning		**Inflexible low-meaning vs Adaptive high-meaning**		**Inflexible high-meaning vs Adaptive high-meaning**	
	Std. test statistic	**Adj. Sig.**	**Std. test statistic**	**Adj. Sig.**	**Std. test statistic**	**Adj. Sig.**
Age	- .08	1.00	2.31	.063	2.31	.062
Time since diagnosis	n/a	n/a	n/a	n/a	n/a	n/a
PMP-B Self-transcendence	.17	1.00	-3.08	.006	-3.14	.005
PMP-B Achievement	.01	1.00	-3.27	.003	-3.17	.005
PMP-B Relationship	-2.82	.014	-5.07	< .001	-2.06	.119
PMP-B Religion	-1.60	.328	-3.51	.001	-1.77	.228
PMP-B Self-acceptance	.01	1.00	-2.45	.042	-2.38	.051
PMP-B Intimacy	-2.03	.128	-3.49	.001	-1.33	.554
PMP-B Fair treatment	n/a	n/a	n/a	n/a	n/a	n/a
PMP-B Total	-2.10	.081	-5.28	< .001	-2.87	.012
PVQ-Conformity	n/a	n/a	n/a	n/a	n/a	n/a
PVQ-Tradition	-1.56	.356	-2.54	.034	- .88	1.00
PVQ-Benevolence	-1.31	.569	-3.37	.002	-1.93	.161
PVQ-Universalism	n/a	n/a	n/a	n/a	n/a	n/a
PVQ-Self-Direction	.73	1.00	-2.04	.124	-2.70	.020
PVQ-Stimulation	.98	.986	-3.09	.006	-3.97	< .001
PVQ-Hedonism	-1.72	.254	-3.94	< .001	-2.07	.116
PVQ-Achievement	n/a	n/a	n/a	n/a	n/a	n/a
PVQ-Power	n/a	n/a	n/a	n/a	n/a	n/a
PVQ-Security	-1.11	.801	-3.07	.006	-1.84	.196
MAAS	n/a	n/a	n/a	n/a	n/a	n/a
Physical well-being	.26	1.00	-2.32	.062	-2.47	.040
Social well-being	-3.74	.001	-3.46	.002	.43	1.00
Emotional well-being	n/a	n/a	n/a	n/a	n/a	n/a
Functional well-being	-3.19	.004	-3.79	< .001	- .44	1.00
Meaning-Peace	-1.22	.670	-2.79	.016	-1.46	.431
Faith	-1.40	.481	-3.66	.001	-2.12	.103
Spiritual well-being	- 1.79	.220	-3.91	< .001	-1.96	.149
FACT-G	-3.18	.004	-3.83	< .001	- .49	1.00
FACIT-SP	-3.17	.005	-4.37	< .001	-1.02	.921

Note: In case of nonsignificant Kruskal-Wallis test, post-hoc tests were not performed.

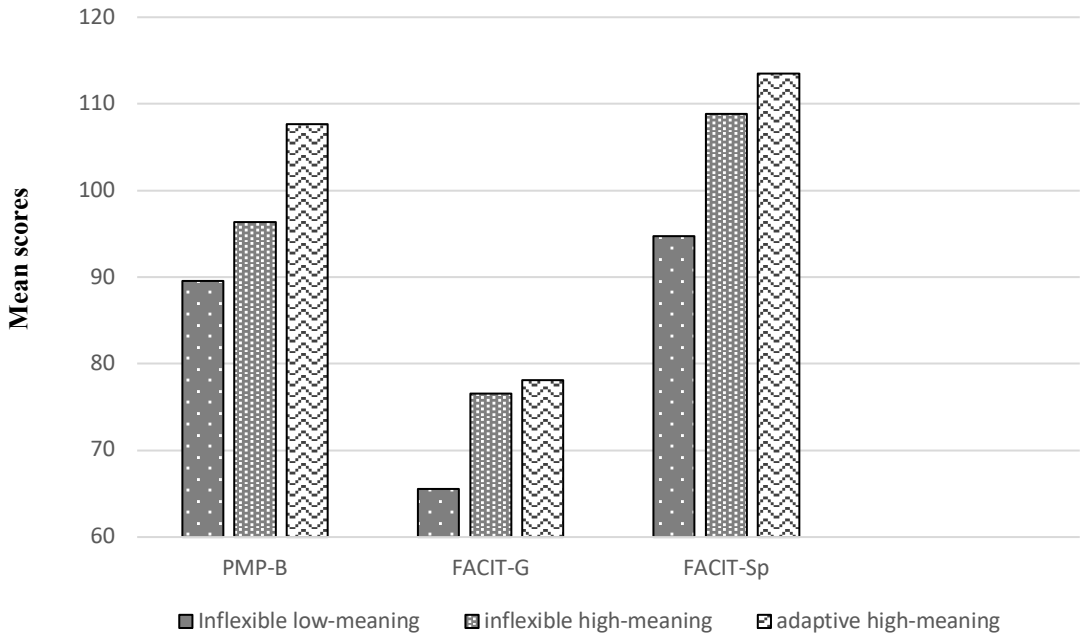

Figure 3. Graphic representation of the three clusters' scores (cancer group) in meaning in life (PMP-B), general quality of life (FACT-G), and quality of life including spiritual well-being (FACIT-Sp). Significant differences were detected in the three measures.

4.7. Discussion

The present study analyzed the impact of a cancer diagnosis on personal values and meaning in life, and explored the clinical relevance of meaning adaptability in terms of global meaning in life and quality of life. For those purposes, we recruited an heterogenous sample of cancer patients and compared them with healthy adults with similar demographic characteristics.

4.7.1. Validity evidence of the VLQ-PC

Our first objective was to develop a reliable instrument to measure meaning adaptability through perceived changes in personal values. For this, we modified the VLQ by

incorporating a measure of perceived changes in values and evaluated its psychometric properties. We named this modified version "the Valued Living Questionnaire – Perceived Change (VLQ-PC)". The VLQ-PC (all subscales and the composite score) showed good internal consistency and test-retest reliability in a period of 10 days in all subscales and its composite.

Concurrent validity of each valued area measured by the VLQ-PC was supported by their associations with closely related values and sources of meaning of the PVQ and the PMP-B (e.g., scores in partner/intimate relations mostly correlated with tradition, benevolence, and intimacy scores). These data suggest that the VLQ-PC measures personal values closely related to the basic human values found by Schwartz (2012) and the sources of meaning identified by Wong (1998). The VLQ-PC composite (the average of importance multiplied by personal implication in each life area) indicated a global score of valued living, as proposed by the original authors (Wilson et al., 2010). This composite was positively associated with meaning in life (PMP-B), trait mindfulness (MAAS), and quality of life (FACIT-Sp). These results provide evidence of convergent validity of this valued living score. Altogether, they indicate that living in accord with personal values is related to a dispositional awareness of internal and external events, the experience of meaning in life, and better quality of life (see also, Bond et al., 2011; Howell & Passmore, 2019; Kashdan & Rottenberg, 2010).

Nevertheless, the most substantial contribution of the VLQ-PC was the assessment of perceived changes in personal values. Perceived changes in values by cancer patients were related to higher global meaning in life, spiritual well-being, and quality of life in general. In comparison with changes in importance, changes in personal implication were more strongly associated with quality of life. The latter finding supports the relevance of valued-based actions (not only cognitions) as a main component of meaning in life and well-being (Wilson et al., 2010; Wong, 2012a). Also interestingly, the inclusion of the subscales of perceived changes in the global VLQ-PC score explained a greater amount of the FACIT-Sp variance than only including the VLQ-PC composite (from 18.8% accounted by the VLQ-PC composite up to 28.4% explained by the total VLQ-PC). These

results reflect the importance of including perceived changes in values to gain a deeper understanding of the mental adjustment of people with cancer and their quality of life.

To our knowledge, this is the first questionnaire that measures perceived changes in values with validated scores. The VLQ-PC can be particularly important for meaning-centered research and interventions. For instance, meaning-centered interventions such as the Meaning-Centered Psychotherapy (MCP, Breitbart et al., 2010) or the Meaning-Making intervention (MMi, Henry et al., 2010) include in their first sessions the evaluation and discussion on how the cancer diagnosis has impacted in one's sense of meaning and identity. Moreover, it can be argued that the adaptation of personal values to the cancer conditions is the major objective of meaning-centered interventions. In this sense, the VLQ-PC could be a helpful instrument to be used in these therapies, both as an assessment and as an intervention tool.

4.7.2. Meaning in life, personal values, and quality of life

Once we gathered validity evidence for the VLQ-PC, our second objective was to analyze the impact of the cancer diagnosis on meaning in life and personal values. Study variables were compared between the cancer patient group and a healthy community sample with similar demographic characteristic. Results indicated that cancer patients had more global meaning in life (PMP-B total score) than their counterparts healthy adults. These findings are in line with the posttraumatic growth literature, showing that several people experience personal growth after a cancer diagnosis (e.g., Cordova et al., 2007; Thornton, 2002). However, our results are in contrast with other previous studies that report similar or lower levels of meaning in life between cancer patients and other groups (e.g., Testoni et al., 2018). One possible explanation of these discrepancies is that the aforementioned studies did not use control groups sharing the same socio-demographic characteristics as the cancer patients.

Higher levels of meaning in life among cancer patients were linked to higher scores in the sources of religion and self-acceptance. In line with this, cancer patients reported more practice of their religion on a weekly/daily basis than their healthy counterparts. They

also reported higher scores in the values of benevolence and tradition, while gave more importance and were more implicated in spirituality, physical self-care, and themselves than the control group. These areas were positively associated with quality of life, reaffirming the notion that patients may use spiritual orientation, self-esteem, and acceptance of suffering and personal limitations as important sources of support to adapt to their illness condition, as suggested by earlier studies (e.g., González-Fernández & Fernández-Rodríguez, 2019; Visser et al., 2009). For instance, Testoni et al. (2018) reported that depression was negatively associated with religious orientation. Jim et al. (2006) also observed that coping strategies such as active coping, acceptance/positive reinterpretation, and religious coping predict better aspects of meaning in life after two years.

Further areas having strong associations with quality of life were intimacy, relationship (PMP-B), parenting, friendship, and citizenship (VLQ-PC). The values of benevolence and universalism (PVQ) were positively related to spiritual and social well-being. These findings are in agreement with those obtained by Scheffold et al. (2014). In that study, the positive predictor of global meaning among cancer patients was "interest in social and/or political causes", while "being acknowledged for personal achievements" and "acquiring material possessions to enjoy the good life" were the negative predictors after six months. Moreover, "preserving culture and tradition", "interest in social and/or political causes", and "personal relationships" predicted lower levels of depression. Notably, the breadth (number) of important sources of meaning acted as a protective factor against anxiety, while it predicted global meaning positively. These data highlight the possible relevance of instruments such as the VLQ-PC and the PMP-B since they evaluate several sources of meaning.

The combination of findings mentioned above provides evidence of the importance of personal relationships and prosocial/self-transcendence values in the maintenance of well-being. The role of social support in meaning and quality of life among cancer patients has been previously reported (e.g., Li et al., 2015; Luszczynska et al., 2013). For example, getting social support from family and friends following diagnosis has been closely related to finding a positive meaning in the cancer experience in the long term (Schroevers et al.,

2010). In contrast, the role of prosociality (values and behavior aimed to contribute to others' welfare) has been scarcely investigated, and there is still controversy about its benefits in cancer (e.g., Fegg et al., 2005; Lepore et al., 2014). Further experimental work is required to establish the viability of prosociality as a source of meaning and quality of life.

4.7.3. Meaning adaptability and its clinical relevance in cancer

The fourth objective of the study was to explore the phenomenon of meaning adaptability. The pathway to assess meaning adaptability was to measure perceived changes in personal values. A number of promising results were found. Firstly, according to the retrospective version of the PVQ, we found that cancer patients reported an increase in universalism and a decrease in stimulation, power, and achievement after the cancer diagnosis as compared to the changes reported by the control group. The perceived decrease in power and achievement was consistent with the decreased importance and implication of cancer patients in work as measured by the VLQ-PC. Secondly, regarding the rest of perceived changes in the VLQ-PC, people with cancer reported increased importance and implication in areas such as family, partner/intimate relationships, parenting, friendship, recreation, spirituality, physical self-care, and themselves in general, as compared to the control group. Of note, most of these changes presented medium-size effects. These results are congruent with the literature of posttraumatic growth in cancer, indicating an improvement in areas such as relationships, spirituality, and the self (Cordova et al., 2007; Thornton, 2002). However, our findings extend previous work by specifying what types of relationships are most affected by the cancer diagnosis and how exactly the values system may shift among cancer patients (see also Greszta & Siemińska, 2011; Sharpe et al., 2005).

We also explored the clinical relevance of meaning adaptability in the cancer patient group. For this purpose, we performed a cluster analysis that yielded to three distinct profiles based on the scores of the VLQ-PC. The *inflexible low-meaning* group consisted of patients with low scores in valued living (low importance and implication in life areas) and resistance to alter their system of values after the cancer diagnosis. This

group presented the lowest scores in quality of life. The second was the *inflexible high-meaning* group; it was composed of patients with high scores in valued living and low perceived change in their personal values. These patients showed some benefits over the inflexible low-meaning group in terms of quality of life, mainly social and functional well-being.

However, a third group of patients showed the highest indicators of well-being. This group was called *adaptive high-meaning* because its members scored high in valued living but also reported significant changes in their values system after the cancer diagnosis. Apart from having the same advantages as the inflexible high-meaning group, patients with adaptive high-meaning presented even higher global meaning in life, better intimate relationships (according to the PMP-B subscale of intimacy), and higher physical well-being than patients in the inflexible high-meaning group. These patients also reported higher scores in self-transcendence, self-acceptance, achievement, and the value of self-direction compared to the second group, which can be considered as indicators of personal growth. Furthermore, spiritual well-being of patients with adaptive meaning was significantly higher than patients with inflexible low-meaning, an advantage that was not observed in the inflexible high-meaning group.

Overall, these findings suggest that the shift of personal values seem to be crucial to adapt one's meaning in life to the cancer experience. In turn, this meaning adaptability is generally associated with different psychological benefits in comparison with resisting to change the values system. Interestingly, we found no evidence of a cluster that would report significant changes in their values system and, at the same time, did not report a high level of valued living. Therefore, it can be argued that meaning adaptability is intrinsically connected to global meaning in life and valued living. These findings corroborate those by Park et al. (2008), who explored the relationship between the meaning-making processes (the efforts to find meaning), the outcomes of these processes (meaning made), and psychological adjustment to cancer. The authors observed that meaning-making was related to psychological adjustment only when it led to meanings made such as growth (perceptions of positive life changes), life meaning (a deepened sense of meaning in life), and restored beliefs in a just world (Park et al., 2008).

It is worth noting that time passed since the diagnosis and cancer stage did not influence the perceived changes in values. This observation may support the hypothesis that meaning adaptability is generally produced during the first weeks after the diagnosis, no matter the severity of cancer. However, higher stages of cancer did show detriments in several areas such as self-acceptance, benevolence, global quality of life, spiritual and functional well-being. This indicates that, for advanced cancer, the mental adjustment to the illness is more complicated, consistently with previous findings (e.g., Breitbart et al., 2000; Chochinov et al., 2002; Morita et al., 2004).

There are similarities between the findings of this study and those found in the literature that describe a response shift related to the quality of life by people with a life-threatening or chronic disease (Hinds et al., 2018; Rees et al., 2005; Sharpe et al., 2005). This response shift has been defined as "a change in the meaning of one's self-evaluation of quality of life as a result of changes in internal standards, values and the conceptualization of quality of life" (Sprangers & Schwartz, 1999, p. 1509). The change in the way of perceiving personal standards and quality of life has been proposed as an important component to evaluate a treatment effect (Sprangers & Schwartz, 1999) and it has demonstrated a clinical relevance for its relation with quality of life (Aburub et al., 2018; Dabakuyo et al., 2013). Our study expands previous findings in literature providing evidence of a response shift in personal values (not in the quality of life as commonly measured) and adding an instrument with validated scores to measure said changes. As suggested, the change in values could be one of the most important factors explaining the response shift in the self-evaluation of quality of life in cancer and other diseases. There is abundant room for further progress in this line of research.

4.7.4. Psychological processes involved in meaning adaptability

The most suggested theory in the literature to explain the phenomenon of values' change following mortality salience is TMT. This theory states that death remainders activate defense mechanisms such as the reaffirmation of cultural beliefs and personal values with the ultimate purpose of reducing death anxiety. In the present study, however, this theory

seems limited for different reasons. First, the impact of cancer in meaning in life and values was not related to trait mindfulness. As trait mindfulness has been found to reduce defense responses to mortality salience (Niemiec et al., 2010), our findings suggest that meaning adaptability is probably not due to defense mechanisms from death. Second, defense mechanisms proposed by the TMT can be considered as avoidance strategies to reduce death anxiety. Avoidance coping, in turn, has been associated with lower meaning in life in cancer (Jim et al., 2006). According to this rationale, if the shift in the system of values observed in cancer patients simply represented a reaffirmation of the worldwide motived by avoidance of death anxiety, we would expect that patients reporting meaning adaptability showed less meaning in life. Contrary to expectations, these patients reported higher meaning in life.

Despite the mentioned inconsistencies, the TMT can be useful to understand the resistance reported by many patients to change their values system. This resistance could be an example of the reaffirmation of personal beliefs and values as a mechanism to avoid death anxiety. Thoughts such as "the cancer has not changed me", "I'm not going to die", or "everything is the same", which are frequent in these patients, could represent attempts of self-preservation to defense against terror of death. Future studies could explore more in-depth these defense mechanisms and their influence in mental adjustment. However, additional psychological processes to those proposed by the TMT seem necessary to understand the impact of a cancer diagnosis in the system of values.

A better candidate to explain the mechanisms involved in the phenomenon of meaning adaptability in cancer is MMT (Wong, 2008), which is rooted in existential positive psychology. According to MMT, values' change and increased meaning in life following mortality salience is related to a positive tendency to personal growth rather than defense mechanisms against death. One of the core processes included in the MMT to imbue life and death with meaning is meaning-reconstruction. Meaning-reconstruction involves intense meaning-seeking and meaning-making to restore a sense of order and coherence when certain events shatter one's assumptive world and question life goals. An essential aspect of this reconstruction is personal transformation, which entails revamping one's worldview and core values. These principles were empirically supported by our

findings as people showing meaning adaptability presented more global meaning in life and different indicators of personal growth than those showing inflexible patterns.

The MMT also states that adjustment to life transitions and disruptions are facilitated by a) discovering attributions and meanings that enhance hope, and b) finding benefits in suffering and adversity. Our results supported the first assumption as meaning adaptability was closely related to faith and different psychological benefits. Regarding the second assumption, we provided evidence showing that many people used the cancer experience as an opportunity to grow personally (for similar results, Calhoun & Tedeschi, 2006; Cordova et al., 2007). These findings support Frankl's (1984) idea that meaning can be found even in the hardest situations, regardless of suffering and pain.

Socioemotional Selectivity Theory (SST, Carstensen, 2006; Carstensen et al., 1999) also provides a frame consistent with our results. This theory asserts that the subjective perception of time change the sources of motivation. When time left in life is perceived as limited, personal fulfillment does not focus on long-term goal pursuits such as knowledge-related goals but the regulation of affect in the present (Carstensen et al., 1999). In this situation, the focus shifts to the maximization of meaningful activities in the present such as deepening existing relationships (Carstensen, 2006). These predictions were confirmed by our results as people diagnosed with cancer gave more importance and were more implicated in their personal relationships, while they valued less work and power, which are normally associated with long-term goals.

Finally, our observations are coherent with the Self-Determination Theory (SDT, Ryan & Deci, 2000, 2004). The SDT states that the pursuit of self-esteem reflects the seek to satisfy three basic psychological needs: relatedness, competence, and autonomy. Thus, when these three needs are fulfilled, individuals experience a sense of significance, meaning, and worth. This theory was supported by our study. For instance, we found that the increase in the value and quality of personal relationships was linked to an increase in meaning in life, self-acceptance, and self-worth. Furthermore, in line with the SDT, we also observed that the value of self-direction was related to meaning in life, spiritual, and social well-being. At the same time, the importance and implication with oneself were associated with global meaning, general quality of life, spiritual well-being, social well-

being, and functional well-being. Like the MMT, the SDT finally proposes that personal development when facing adversity and death is more about the intrinsic motivation for growth than defense against anxiety (Ryan & Deci, 2004).

4.7.5. Limitations and conclusion

The generalizability of our results presents certain limitations. For instance, the structure of VLQ-PC does not allow us to perform factorial analysis, which is an important source of validity evidence. The VLQ-PC measures valued living and perceived changes in several possibly unrelated life areas. However, although the scores in these areas are used as a composite, they cannot be considered as one single factor because of their variety. This makes sense from a theoretical perspective since the system of values is personal and varies from one individual to another. The use of the composite score is justified by the literature stating that the number of valued areas is a protective factor.

Another limitation is related to the distribution of the PVQ scores. For example, many people rated some values (e.g., benevolence, universalism, self-direction, hedonism) with the maximum scores (present and past). This ceiling effect may hinder the significance of statistical differences among PVQ values. We found the same problem was in a previous pilot study with a similar retrospective version of the VLQ (not published). Taking into consideration these psychometric limitations (see also, Greszta & Siemińska, 2011), and the excessive length of this method, we decided to create the VLQ-PC, a more sensitive tool to discriminate perceived changes, allowing the respondent to choose whether values decreased, increased, or remained the same over time.

Additionally, this study was cross-sectional. It is important to bear in mind the possible recall bias of the instruments that measure changes in values retrospectively. Some participants had received their cancer diagnosis up to five years ago; therefore, it could be argued that the memory to recall values before the cancer is limited (for similar considerations, see Ahmed et al., 2004; Schwartz et al., 2004). For this reason, we included a control group, took into account the possible effect of the time passed since the diagnosis, and performed a test-retest analysis of the VLQ-PC. Previous studies have also supported

the reliability of memories for recent traumatic experiences (e.g., Peace & Porter, 2004). Reference time between groups was not exactly the same. While the average of time since diagnosis in the cancer group was 18 months, the reference time for values' changes in the control group was 12 months. It could be argue that differences between groups found in perceived values' changes were due to this time difference. However, in support of our results, we observed that time since diagnosis did not affect values' changes in cancer patients, with the exception of spirituality.

For the recall bias, we can also argue that we are not evaluating the "true" change of personal values, but the internal meaning processes used to adapt to the cancer conditions. These processes are ongoing and can be tested at any moment. For that reason, we speak of "perceived changes" in values instead of "changes" per se. Even if we considered that the recall bias played a vital role in our findings, the results still support a clear clinical significance of meaning adaptability (for further support of these retrospective methods see Dabakuyo et al., 2013; Visser et al., 2005).

The use of self-reports is also subject to social desirability. In the case of the questionnaires that measure values and meaning, it could be argued that respondents project a socially desired imagine of their lives that may not represent their actual life. We had no form to control this variable apart from eliminating participants with extreme scores (positive or negative) and asking respondents to be as sincere as possible.

Finally, the use of a convenience sampling method can hinder the generalizability of our findings. For instance, females were overrepresented and the cancer patient sample consisted of a great variety of different cancer types and stages. Future studies with more representative samples based on gender, type of cancer, and cancer stage could shed more light on this topic.

Notwithstanding these limitations, this work offers valuable insights into the nature of change in meaning in life and personal values experienced by cancer patients, and provides detailed information about the relationship of this meaning adaptability with quality of life and meaning in life. The findings call for the inclusion of meaning adaptability in meaning-centered research and interventions in cancer as an important component of mental adjustment.

Chapter 5

Study 3.
Fostering meaning in life through death awareness and prosociality in close relationships: a pilot intervention

The true value of a human being can
be found in the degree to which he
has attained liberation from the self.

ALBERT EINSTEIN

Frankl's original approach to meaning in life is intrinsically linked to that of self-transcendence (Frankl, 1984). He understood self-transcendence as the end value for seeking and serving something greater and beyond the self, in other words, the contribution to a higher cause involving others (Wong, 2014). Therefore, from its origins in psychology, the concept of meaning in life, although taking into consideration its individual aspect, makes reference to a purpose in life oriented towards the welfare of others. According to this perspective, the selection of who are these "others" and the way how one contributes to their welfare is personal. Examples of purposes in life with this self-transcendental character include caring for our relatives and friends, instill values, leaving a legacy, and contributing to society.

Other humanistic-existential theories also highlighted the central role of self-transcendence in human development. For instance, in his later years, Abraham Maslow placed self-transcendence at the top of the human needs, above self-actualization (Koltko-Rivera, 2006; Maslow, 1996). What is more, self-actualization has been considered to be

a "by-product" of self-transcendence which means that self-actualization is not possible without transcending the self for a greater cause than oneself (Frankl, 1988; Wong, 2014). In Maslow's (1998) words: "…the greatest attainment of identity, autonomy, or selfhood is itself simultaneously a transcending of itself, a going beyond and above selfhood. The person can then become relatively egoless" (p.117). Thus, meaning in life and self-actualization seem to be related to a positive purpose in a social context that *not only* benefit the person.

Further theories of meaning in life have also adopted this self-transcendental approach to meaning. For example, based on the Frankl's meaning-seeking model, Wong (2014) argued that the major source of meaning in life is self-transcendence, which can be achieved in different life domains; for instance, through relationships, intimacy, community, and religion. For this author, self-transcendence involves a purposeful life that is dedicated to loving others or serving a cause greater than one's self, it is the liberation from self-absorption and the boundary of the physical self (Wong, 2016a). In a similar vein, this conceptualization of meaning in life has been used from the beginning of positive psychology. According to Seligman (2002), a meaningful life entails using one's virtues and talents to service a cause greater than oneself.

In summary, previous literature suggests that a meaningful life is characterized by prosociality, which consists on values and behaviors voluntarily aimed to benefit others (Batson, 1998; Eisenberg & Fabes, 1998; Schwartz, 2010). However, it is worth to note that prosociality is voluntary in essence and the way how one contributes to others is personal and unique. Therefore, the construct of prosociality, the same as that of meaning in life, also relies on authenticity, understood as being true to oneself and living in accordance with one's values, talents, and beliefs (Harter, 2002; Rogers, 1961; Wilson et al., 2010).

5.1. Meaning in life, prosociality, and death awareness

There is scientific evidence showing that helping others is beneficial for the helper, encouraging greater satisfaction with life, positive emotions, physical health, greater

longevity and less depression (Post, 2007). Moreover, the personal benefits of prosociality cannot only be explained by the consequent social support obtained from those who receive help. Contributing to the welfare of others can be beneficial in itself (Dulin & Hill, 2003).

Despite the strong theoretical link between prosociality and meaning in life, there are very few experimental studies demonstrating how by encouraging prosociality, meaning in life increases (Klein, 2016; Van Tongeren et al., 2016). For instance, Klein (2016) found that prosocial behaviors such as volunteering and spending money to benefit others increased the sense of meaning in life. In this study, the relationship between prosociality and meaningfulness was mediated by increases in the feeling of personal worth and self-esteem. Similarly, Van Tongeren et al. (2016) demonstrated through a series of experimental studies that prosocial behavior can enhance meaning in life even after controlling for personality traits and self-esteem. The latter study also reported that relationship satisfaction partially mediated the link between prosocial actions and meaning in life. Perceptions of prosociality, in turn, increased when meaning was implicitly threatened. This finding is consistent with previous studies showing that prosociality and meaning in life can be promoted by mortality awareness (Jonas et al., 2002; Simon et al., 1998).

The vast majority of ealier studies operationalized prosociality as acts aimed towards people outside of the inner social circle (contributing to a non-profit organization, giving alms, participating in a community, etc.). However, the previous studies of this doctoral dissertation indicate that people often direct their prosociality towards their close relationships (family, intimate relationships, and friends), and these are the sources that most contribute to meaning in life. For example, in our study with cancer patients (Chapter 4), we observed that after the diagnosis of cancer, many people experience greater meaning in their lives. This change was mainly associated with valuing more their family, intimate relationships, friends, spirituality, and oneself. Patients that experienced this shift in their system of values presented higher levels of self-transcendence, more benevolence, and higher indices of quality of life such as more spiritual well-being. In our Spanish adaptation of the PMP-B (Chapter 3), we further demonstrated the importance of relational sources in meaning in life and well-being. Among the sources that predicted higher levels of purpose

in life were intimacy, fair treatment by others, and self-transcendence. These sources, together with relationship (having friends and being liked by others), also predicted higher levels of psychological well-being.

These results suggest that prosociality, especially when directed towards close relationships, may play a central role in meaning life and well-being. Nonetheless, no experimental studies were conducted that would promote prosociality in close relationships in order to enhance meaning in life.

5.2. Aims of Study 3

The aim of the present study was to assess the effect of a pilot intervention consisting of five sessions designed to foster meaning in life through prosociality in close relationships and death awareness. The intervention was implemented among university students and the results were compared with a control group. We also measured the intervention's effects on personal values, psychopathological symptoms, and personal growth. Both quantitative and qualitative analyses were performed.

The hypotheses of Study 3 were the following:

H1. The intervention would increase prosociality and self-transcendence among university students.

H2. Participants in the experimental group would be more involved in their close relationships in comparison with the control group.

H3. The experimental group would enhance their meaning in life beyond and above the control group.

H4. Students in the intervention group would show higher levels of personal growth and lower psychopathological symptoms than the control group.

5.3. Method

5.3.1. Participants

An initial sample of 94 Spanish-speaking third-year psychology undergraduates from University of Almeria (Spain) were recruited for this study. Forty nine students from one class were assigned to the experimental condition and other 45 students from a different class were assigned to a waiting list control condition. From this initial sample, a total of 47 students completed all pre- and post- measures (intervention = 25, control = 22) and were included in the data analysis (see Table 15). The experimental group was composed of eight males and 17 females (68%), ranging from 20-47 years (M = 24.56, SD = 6.81). The control group included four males and 18 females (81%) with an age range from 20-52 years (M = 23.05, SD = 6.85). A total of 38 participants responded a follow-up test four months after the end of the intervention (intervention = 23, control = 15). Of note, 15 students indicated to have received a diagnosis of a mental disorder, six students reported to be under psychological treatment, and four of them were under psychopharmacological treatment (Table 15).

Table 15. Demographic characteristics of the sample in Study 3.

	Intervention (n = 25)	**Control (n = 22)**	**Total (n = 47)**
Female (%)	17 (68.00)	18 (81.80)	35 (74.50)
Mean age (*SD*)	24.56 (6.81)	23.05 (6.85)	23.85 (6.80)
Mental disorder diagnosis (%)	6 (24.00)	9 (40.90)	15 (31.90)
In psychological treatment (%)	2 (8.00)	4 (18.20)	6 (12.80)
In pharmacological treatment (%)	1 (4.00)	3 (13.60)	4 (8.50)

5.3.2. Measures

Personal Meaning Profile-Brief (PMP-B). We used the Spanish version of the PMP-B (Carreno et al., 2020; original version, McDonald et al.. 2012; Wong. 1998). Apart from

measuring global meaning in life, this questionnaire includes subscales such as self-transcendence, relationship, intimacy, and fair treatment which represent relational sources of meaning (see Chapter 3). In the total sample, the global scale showed a Cronbach's alpha of .82 at pre and post, and .78 at follow-up. Cronbach's alphas of the subscales ranged from .70 to .90, except for Self-acceptance that ranged from .31 to .51.

Valued Living Questionnaire – Perceived Change (VLQ-PC). To assess the impact of the intervention on personal values and committed actions, we used the Valued Living Questionnaire- Perceived Change (VLQ-PC, Chapter 4; original version, Wilson et al., 2010). To measure perceived changes at pre, post, and follow-up, we asked participants about the changes perceived from the last week (at pre), and from the beginning of the study, around Easter (at post and follow-up). In the present study, Cronbach's alphas ranged from .68 to .81 for the valued living composite., from .51 to .81 for the subscale of perceived change in values importance, and from .63 to .71 for the subscale of perceived change in personal implication.

Attitudes towards Helping Others scale (AHO). This questionnaire contains four items that assess altruistic values (values aimed to help or assist other people) using a 5-point Likert scale (Webb et al., 2000). We employed the Spanish version of the measure (Montilla Jiménez et al., 2009). Cronbach alpha in the total sample ranged from .34 to .49.

Empathetic Concern scale (EC). We implemented the Empathetic Concern subscale of the Interpersonal Reactivity Index (IRI, Davis, 1980; Spanish version, Pérez-Albéniz et al., 2003). This subscale measures "other-oriented" feelings of sympathy and concern for unfortunate others, using eight items with a 5-point Likert scale. Cronbach's alphas in this study ranged from .67 to .72.

Personal Growth scale (PG). This is a subscale of the Ryff's Psychological Well-Being scales (SPWB, Ryff, 1989). We used the Spanish adaptation by Díaz et al. (2006, see Chapter 3 for detailed information). Cronbach's alpha of this scale in our sample ranged from .42 to .82.

Depression Anxiety Stress Scale (DASS-21). The Spanish version of the DASS-21 (Bados et al., 2005; original version by Brown et al., 1997) was used (see Chapter 3 for detailed information). In our sample, Cronbach's alphas of the global scale were .94, .93

and .92 at pre, post, and follow-up, respectively. Cronbach's alphas of the subscales ranged from .83 to .90.

5.3.2.1. Process variables

Self-focus/Others-focus. For the present study we created three one-item scales to measure self-focus and others-focus (Appendix A). The first scale evaluated from 1-100 the degree to which undergraduates were generally focused in themselves in the present (from *nothing at all* to *completely*). The second scale measured how students were focused on contributing to others from 1 (*nothing at all*) to 100 (*completely*). The third scale was an axis that combined self-focus versus others-focus in a scale with a 50-0-50 structure. The left extreme represented a complete self-focus, the right extreme represented a complete others-focus, and zero represented an equal level between both.

Global meaning in life. We also developed a scale asking participants how much meaning their lives had from 1-100 (from *nothing at all* to *full of meaning*). This was aimed to evaluate their global sense of meaning in life.

Self-worth. This was another one-item scale that measured the degree to which participants valued themselves as a person from 1-100.

5.3.2.2. Qualitative measure

Finally, at the end of the intervention, we asked the participants of the experimental group the following open-ended question: *To conclude, it would be very helpful if you wrote on this blank sheet what your experience has been like throughout this study. We would like to know whether the intervention has contributed to you or not. If so, how has it personally contributed to you? If not, why do you think it has not influenced on you?*

5.3.3. Procedure

Through class announcements, all third-year psychology undergraduates from University of Almeria were invited to participate in the study. The assignment of each class to participate in the experimental or control condition was done using a convenience sampling method. Undergraduates in the experimental group were informed about the general characteristics of the intervention. Participants in the control condition were informed to be recruited for a study about personal values in university students. All students participated voluntarily, gave informed consent before participation (Appendix B), and received no monetary of other type of compensation for their involvement in the study.

The total length of the study was six months. Pre, post, and follow-up measures were obtained during the same weeks in both groups. Pre-intervention measures were taken at the beginning of Session 1. Post-intervention measures were obtained two months later, one week after the intervention was concluded, one week before the final exams started.. Follow-up was assessed four months after post-measurement. Pre and post instruments were delivered in paper while follow-up measures were taken online. All variables were measured in both groups with the exception of the process variables. These variables were measured during the individual sessions, at post, and at the follow up. During the individual sessions, we asked participants to respond the self-focus/others-focus scales according to their past, present, and ideal future (e.g., how students considered that they had been focused on contributing to others during his life, how they were focused on others in the present, and how they would like to be focused on others in the future).

The intervention was carried out in university classrooms. It consisted of five sessions on consecutive weeks with the exception of the third session that took place after a period of two weeks. One therapist (the doctorate candidate) and four assistants previously trained coordinated the intervention. All sessions were applied in group format, except for the third session that was individual. The attitude of the therapist throughout the intervention was empathetic and validating, using several self-revelations and active listening to connect with the undergraduates. The study was approved by the Bioethics Committee of the University of Almeria.

5.3.3.1. Intervention protocol

This 5-session protocol was inspired by our previous study with cancer patients (Chapter 4), the meaning group intervention by (Wong, 2016b), and the protocol by Aron et al. (1997), aimed to generate interpersonal closeness. The structure of the intervention was as follows (see Table 16 for a summary):

-*Session 1. Psychoeducation* (1h). This was a group introduction of the meaning-centered approach by Viktor E. Frankl and Paul T. P. Wong. Undergraduates discussed with the therapist about the human drive for self-transcendence, the different sources of meaning in life, the existential vacuum and the need of prosocial values in modern societies.

-*Session 2. Death awareness* (1h). Session 2 started with a brief 20-min group meditation in which participants were guided with their eyes closed to imagine receiving a cancer diagnosis. This was aimed to promote death awareness. As can be observed in Appendix C, after a relaxation phase, undergraduates were mentally induced to imagine themselves going to the hospital for receiving the results of a regular health check-up and being unexpectedly sent to talk to an oncologist. They thought about the moment with the oncologist, the return to their family home, their emotions, and how they chose to live from then on. The prognosis of cancer was intentionally kept uncertain. This exercise was previously applied in a pilot study with university students (not published nor included in this dissertation), and we observed short-term changes in the values system similar to the ones experienced by cancer patients. The exercise was finished explaining that it had been only an imaginative exercise, but maybe it could help them to clarify their meaning in life and ways to behave more authentically. During the rest of the session the undergraduates described their experience and their personal conclusions related to the exercise.

-*Session 3. An existential conversation* (1h 15min). A battery of 19 open-ended questions was created to promote self-transcendence and therapeutic alliance (see Appendix C). The therapist had individual sessions as “real” existential encounters with each undergraduate. Questions were related to the students’ personal values, relationships, life history, personal growth, death, and self-transcendence. For instance, two questions measured (from 1 to 100) how much meaning would the student’s life have in their ideal

deathbed with or without contributing to others. The responses to these two questions were compared (see Results) to make students aware of the importance of prosociality in their ideally meaningful lives. This battery of questions was previously applied by María and Carreño (2019) in a single case with depression and was associated with improvements in psychological well-being and valued living, while it helped to reduce the levels of psychological distress of the patient.

-*Session 4. Generating intimacy* (2h). The experimental group was divided into two subgroups for the last sessions to facilitate the group dynamics. Assignment to each subgroup was selected by students depending of their schedule preferences. Each subgroup had their session in a different day but the exercises and the therapist were identical. The ultimate purpose of these group dynamics was to further develop the students' interpersonal skills and prosocial behavior in order to be extrapolated to their close relationships outside of the study. Participants started with an exercise simulating social isolation. During five minutes they walked around the room without eye contact or conversation. This exercise was aimed to make them reflect on the importance of social interactions, and served as a metaphor of the ever increasing lack of interpersonal closeness in modern society. The second exercise was a role playing in which participants had to exaggerate their normal social role when interacting with the rest of people to make them more aware of how their daily social interactions look like. For example, if one person was normally shy, she could sit on a corner and speak with nobody. In the third exercise, undergraduates were asked to liberate their "Freudian id" by screaming, running, hitting objects, whatever they felt like without thinking about social expectations. This was aimed to reduce their shame and the power of social norms when interacting each other.

After these short exercises, undergraduates sat in a circle and each person introduced himself briefly. They were asked to share why they were participating in this experiment, how important was social connection in their lives, to reveal something intimate for them, and to mention some interpersonal aspects they wanted to improve. After a participant introduced themselves, the rest of the group mentioned two positive traits about them to make them feel more valued by the group. During the rest of the session (around one hour), undergraduates worked in pairs, with a partner they did not know well

before. In this couple exercise, firstly, participants were encouraged to speak during five minutes about the negative aspects they had seen in the other. This "criticizing exercise" was aimed to activate and work with the psychological barriers experienced in intimate relationships. In line with existential positive psychology, we argue that a "real" personal encounter should include both negatives and positives. In continuation, we gave them a selection of 27 out the 36 questions by Aron et al. (Appendix C, 1997) to ask them to their partners. These questions are well-known for promoting love and interpersonal closeness. Soft ambient music (Pachelbel's Cannon and the soundtracks of the movies Gladiator, Forest Gum, and A Clockwork Orange, among others) was played during the exercises to create a relaxed atmosphere. Finally, participants were asked to bring their three favorite photos in life for the next session.

-*Session 5. Encouraging prosociality* (2h). The final session was conducted with the same two-subgroup format as Session 4. An additional therapist participated in this session. This therapist introduced himself by explaining the importance of social skills and altruistic values in his professional career, acting as a model. The next exercise of this session was a presentation of the three favorite photos in life of each participant. After this exercise, we divided the group in groups of three people, trying to not match the same people from the previous couple exercise. We asked the participants to reveal a personal commitment and the aspects of their lives they wanted to improve. After one of the three members reveled this information, the other two tried to help them with the problems manifested. In continuation, we carried out a trust-based exercise. Students were asked to walk around the room in pairs, one person with his eyes closed and the other guiding the direction in order not to crash with other couples. All participants experienced both roles in each exercise (helper and helped). The final exercise was a 15-min interpersonal meditation in pairs. Interpersonal meditation consists on the practice of mindfulness by keeping eye contact with another person in silence. This exercise served to reduce the prejudices we usually have when others are looking at us. It also helped to work with possible emotional barriers found when intimating with others. After this meditation, the group expressed their experience with the intervention. To conclude, the therapist

summarized the intervention, shared his own experience and encouraged the participants to maintain prosocial behavior in their lives.

Table 16. Summary of the intervention protocol.

	Content of the sessions
Session 1. Psychoeducation (1h)	Group introduction of Viktor Frankl's and Paul T. P. Wong's theories of meaning in life. Discussion about the need of prosocial values in modern societies.
Session 2. Death awareness (1h)	Guided group meditation to experience an imagined diagnosis of cancer and its personal impact on emotions and values.
Session 3. A existential conversation (1h 15min)	Individual sessions using 19 open questions to discuss about existential topics such as the student's personal values, meaning in life, relationships, life history, personal growth, death, and self-transcendence.
Session 4. Generating intimacy (2h)	These group dynamics aimed to remove shame and promote intimacy. They included the simulation of social isolation, exaggerating social roles, liberating impulses in public, sharing personal revelations to the group, mentioning positive and negative aspects of the members, and asking in pairs the questions by Aron et al. (1997) to generate interpersonal closeness.
Session 5. Encouraging prosociality (2h)	The final group dynamics aimed to promote prosociality and confidence, including the introduction of an external therapist that served as a humanistic model, sharing with the group the three favorite photos in life, helping groups, walking in pairs with closed eyes, an interpersonal meditation, and a final summary of the personal experience during the whole intervention.

5.3.4. Data analysis

Statistical analyses were performed using SPSS, version 25.0. In case of the variables measured in both groups, missing data were 10.29%. Little's Missing Completely at Random Test (Little, 1988) indicated that these data were missing at random, $\chi 2 = .00$. $df = 9875$. $p = 1.00$. There were no missing data in the intervention group specific variables. Missing data on the item level were replaced with the Expectation-Maximization algorithm

for each subscale for DASS-21, PG, and PMP-B but not for VLQ-PC. Data of scales with more than 20% of missing data and entire missing cases were not replaced.

Means and standard variations were computed and tests of normality, kurtosis, and skewness were performed for study variables and their residuals. Outlier data points were removed from the database. Outliers in case of normally distributed variables were identified with the outlier labeling rule, using 2.2 as a multiplier (Hoaglin & Iglewicz, 1987). Outliers of non-normally distributed variables were removed if they were more than three standard deviations from the mean. A total of 35 (+plus what you removed) outlier data points were removed. In the case of global meaning in life (process variable), three participants were removed as they showed the maximum score in the pre-test (ceiling effect). Cronbach' alphas were computed to assess internal consistency of the scales.

Pre-intervention differences were assessed with independent samples t-test for continuous and normally-distributed variables, with Mann-Whitney U-tests for continuous and non-normally distributed ones and with chi-square test for the variable gender.

Analyses for each outcome variable were conducted using linear mixed model analyses (MLM), according to the intent-to-treat principle. This approach incorporates all available data to prevent data loss due to participant dropouts (e.g., Gueorguieva & Krystal, 2004; Salim et al., 2008; Shek & Ma, 2011). The models were fitted with full information maximum likelihood model estimation (e.g., Korner-Nievergelt et al., 2015; Peugh & Enders, 2005; Verbeke & Molenberghs, 2000). Time was added as a repeated variable. Fixed effects part of the model treated outcomes as a function of time (pre-test, post-test, follow-up), condition (intervention, control), and time with condition interactions. In the case of each model, unstructured covariance matrix was compared with a first-order autoregressive and a compound symmetry one. Model fit was assessed using AIC and the better fitting model (smallest AIC) was selected (see for instance Little, 1988; West, 2009). In all cases, this was the model with the unstructured covariance matrix. Residuals were examined for non-normality using Q–Q plots and all models were normal.

After each MLM, paired t-tests with a Bonferroni correction were employed to evaluate pairwise comparisons between groups at each timepoint (pre, post, follow-up),

and in each group between different time points (pre vs post, pre vs follow-up, and post vs follow-up). All statistical tests were two-tailed with the significance level set at 0.05.

Finally, to analyze qualitative data, two researchers independently grouped participants' responses into different categories, and a test of interrater reliability using Cohen's kappa coefficient was calculated to evaluate agreement between the two raters.

5.4. Results

5.4.1. Sample characteristics

No differences were observed between the two groups on age, gender, and any of the baseline measures, $p > .05$. Table 17, Table 18, and Table 19 show average data for outcome measures of the study.

5.4.2. PMP-B

Results of the PMP-B scores in the two groups can be seen in Table 17 and Figure 4. There were no main effects (time or group) or interaction effects in the case of the PMP-B global scores. However, post-hoc pairwise comparisons showed that the intervention group increased the PMP-B global scores significantly from pre-test to post-test ($p = .013$), while the control group showed no significant change, $p > .05$. PMP-B scores in the intervention group between pre and follow-up, and between post and follow-up were not significantly different. This suggests that meaning in life as measured by the PMP-B was enhanced after the intervention and this increase remained stable after four months.

Regarding the PMP-B sources of meaning, we found an effect of time in the case of Self-transcendence, $F(2, 40.213) = 4.055$. $p = .025$. Both groups tended to increase their Self-transcendence scores over time. However, according to post-hoc pairwise comparisons, a significant increase was found only in the intervention group from pre to post ($p = .013$). These scores did not change significantly from pre to follow-up, or from

post to follow-up. An effect of group was found in Self-acceptance scores, $F(1, 44.679) = 5.836$, $p = .020$. Participants in the intervention tended to report higher levels of Self-acceptance than the control group, however, only significant differences between groups were observed at post, $p = .013$. Regarding Intimacy, there was a significant interaction effect $F(2, 40.478) = 6.192$, $p = .005$. Post-hoc pairwise comparisons indicated that in the control group Intimacy scores decreased from pre to follow-up ($p = .017$), and from post to follow-up ($p = .010$), while in the intervention group it tended to increase, although not significantly. We found no further significant results in the rest of the PMP-B sources of meaning, $p > .05$.

5.4.3. VLQ-PC

Results in the VLQ-PC scores are depicted in Table 18 and Table 19. We found no significant results in the VLQ-PC composite over time or between groups, $p > .05$. However, a significant interaction effect was found in the total scores of perceived change in importance, $F(2, 40.097) = 5.425$, $p = .008$, and perceived change in personal implication, $F(2, 38.653) = 5.754$, $p = .006$. The intervention group reported a significant increase in the total change in importance ($p = .041$) and implication ($p = .046$) from pre to post, while the control group presented no significant change, $p > .05$. Likewise, total perceived change was significantly higher in the intervention group at post than in the control ($p = .001$, $p = .007$, respectively). Significant results in importance, implication, and perceived change in each life area are detailed below.

A significant effect of time was found in the importance to Family, $F(2, 40.527) = 3.282$, $p = .048$. Both groups tended to give more importance to Family from pre to post and follow-up, but these differences were not significant in the post-hoc pairwise comparisons. Nonetheless, we found a significant interaction effect in the perceived change of importance and implication in Family, $F(2, 41.880) = 7.825$, $p = .001$, and $F(2, 40.265) = 7.705$, $p = .001$. Students in the intervention group perceived a greater positive change in importance and implication in Family from pre to post ($p = .005$, $p = .046$, respectively). These perceived changes at post were significantly greater in the intervention group than

in the control group (p = .005 for importance, p = .001 for implication). Participants in the control group reported a negative change in implication in Family from pre to post (p = .022). However, these students perceived a positive change in importance and implication from post to follow-up (p = .009, p = .033, respectively).

Post-hoc pairwise comparisons showed a significant increase of personal implication in Intimate Relationships in the intervention group from pre-test to follow-up (p = .037, see Figure 5), while it did not significantly change at any point in the control group (p > .05). An effect of time was also observed in the perceived changes in importance and implication in this area, F(2, 41.287) = 3.692, p = .033, and F(2, 39.259) = 4.167, p = .023, respectively. Both groups tended to perceive a greater positive change in importance and implication in Intimate Relationships from pre to follow-up. However, only in the intervention group this change between pre and follow-up was significant (p = .033 for change in importance, p = .013 for change in implication). Additionally, the intervention group perceived a greater change of importance in Intimate Relationships than the control group at post (p = .020).

In the area of Friendship there were significant results only in the perceived changes. We found an interaction effect in the perceived change of importance, F(2, 39.178) = 4.118, p = .024. Participants in the intervention group indicated a greater positive change in comparison with the control group at post (p = .018). The perceived change in implication was also significantly greater in the intervention group at post (p = .033).

In the case of Work, an effect of group was observed in importance, F(1, 44.520) = 4.574, p = .038. The control group generally tended to give more importance to Work than the intervention group. However, there were no significant differences in the post-hoc pairwise comparisons. Similarly, perceived changes in this area did not present significant differences, p > .05.

Regarding Education, there was an effect of time in personal implication, F(2, 41.647) = 4.229, p = .021. Both groups tended to increase implication in this area from pre to post. This is explained as in the post-test, students were starting the final exams' period. However, only the control group significantly increased their implication from pre to post (p = .008). The control group perceived this significant increase in implication at post as

compared to the intervention group (p = .046). Implication in Education in the control group at post was significantly higher as compared to the intervention group (p = .017).

Table 17. Descriptive statistics by experimental condition.

	Intervention *M* (*SD*)			**Control *M* (*SD*)**		
	pre (*n* = 25)	**post (*n* = 25)**	**FU (*n* = 23)**	**pre (*n* = 22)**	**post (*n* = 19)**	**FU (*n* = 15)**
DASS Depression	8.32 (7.63)	6.88 (7.07)	7.22 (8.02)	7.30 (6.06)	9.79 (10.09)	9.73 (10.61)
DASS Anxiety	6.17 (7.34)	6.16 (6.73)	4.35 (5.71)	5.90 (6.56)	4.35 (6.13)	4.86 (6.31)
DASS Stress	14.00 (9.56)	12.72 (8.42)	11.83 (8.67)	13.91 (8.54)	19.37 (10.35)	18.27 (10.44)
DASS Total	26.75 (20.22)	25.76 (18.18)	23.39 (20.38)	22.95 (14.07)	29.65 (19.19)	32.57 (22.12)
PMP Self-transcendence	13.64 (3.12)	15.20 (2.75)	14.13 (3.29)	13.32 (4.11)	13.58 (4.54)	15.20 (2.34)
PMP Achievement	15.16 (2.61)	15.60 (2.66)	15.70 (3.17)	14.45 (4.62)	15.16 (3.73)	16.27 (3.69)
PMP Relationship	15.92 (3.17)	16.44 (3.24)	17.04 (2.93)	15.50 (3.50)	14.89 (3.67)	16.47 (2.95)
PMP Religion	4.04 (1.97)	4.10 (1.61)	4.14 (2.39)	4.73 (2.59)	4.44 (2.25	4.13 (1.88)
PMP Self-acceptance	14.44 (2.77)	15.72 (3.22)	15.17 (2.74)	12.82 (3.20)	13.00 (3.67)	14.07 (3.39)
PMP Intimacy	14.24 (5.42)	14.80 (5.13)	16.43 (5.66)	16.00 (5.19)	15.68 (5.27)	13.47 (5.32)
PMP Fair treatment	13.64 (3.25)	14.56 (2.86)	14.13 (3.36)	13.05 (4.02)	14.63 (3.53)	13.13 (2.53)
PMP Total	90.09 (11.37)	95.14 (11.44)	95.62 (12.46)	89.86 (17.60)	89.39 (13.35)	92.73 (11.29)
Personal Growth	20.82 (2.63)	22.46 (1.72)	21.86 (2.36)	20.00 (4.20)	20.68 (3.02)	21.93 (2.12)
Empathetic Concern	27.68 (3.74)	29.12 (3.40)	28.64 (3.71)	27.91 (3.61)	29.78 (2.76)	29.73 (2.66)
Attitudes Helping Others	13.48 (2.58)	14.72 (2.46)	14.41 (2.13)	14.73 (2.51)	15.11 (2.60)	15.40 (2.23)
Others-focus	67.59 (22.06)	79.80 (17.41)	82.50 (11.31)	n/a	n/a	n/a
Self-focus	74.00 (18.93)	79.40 (17.28)	80.91 (16.52)	n/a	n/a	n/a
Axis self vs others	-4.40 (21.62)	-3.00 (20.87)	4.77 (22.39)	n/a	n/a	n/a
Self-worth	77.60 (14.57)	79.40 (17.75)	79.18 (18.37)	n/a	n/a	n/a
Global meaning in life	69.73 (17.91)	77.41 (16.06)	79.65 (15.31)	n/a	n/a	n/a
Meaning in life without impact on others	27.00 (23.89)	n/a	n/a	n/a	n/a	n/a

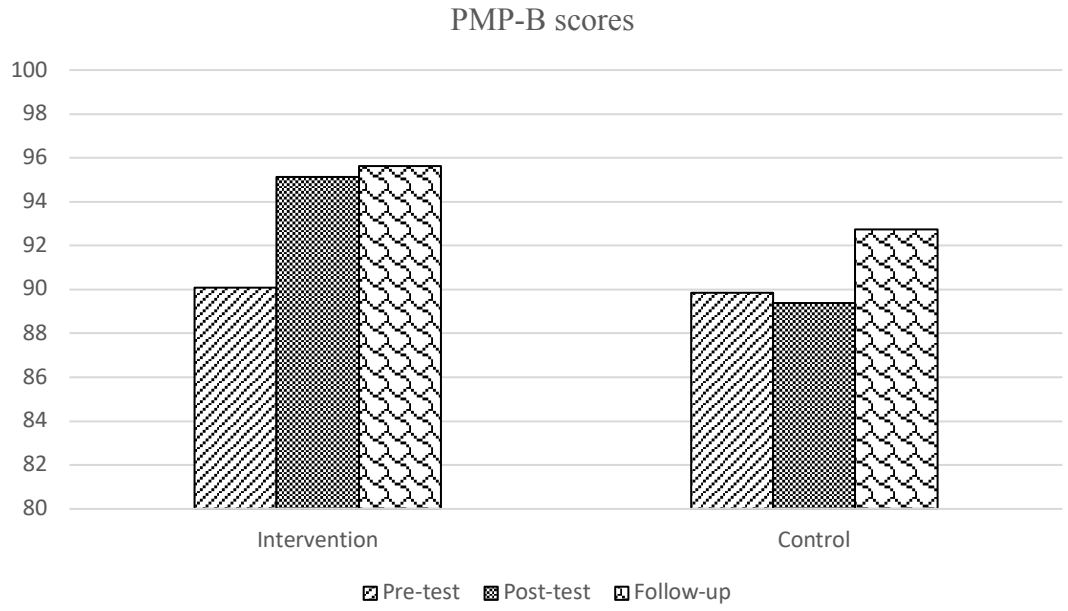

Figure 4. Graphic representation of the PMP-B global scores (representing meaning in life) in the two groups. In the intervention group, the PMP-B scores increased significantly from pre to post ($p = .013$), and did not differ from post to follow-up ($p > .05$). No significant differences were found in the control group ($p > .05$).

A significant interaction effect was found in the importance of Recreation, $F(2, 40.165) = 6.740$, $p = .003$. The control group gave more importance to Recreation than the intervention group at follow-up (end of summer), $p = .010$. The intervention group reported less importance of this area from post to follow-up ($p = .026$).

In Spirituality, there was a significant effect of group in importance, $F(1, 45.101) = 4.488$, $p = .040$, and a significant interaction in personal implication, $F(2, 40.088) = 3.631$, $p = .036$. Participants in the intervention group gave more importance to Spirituality and were more implicated in it at post than the control group ($p = .014$, $p = .034$, respectively). These changes were also perceived by students. For example, there was an effect of group in the perceived change of importance, $F(1, 40.280) = 5.669$, $p = .022$. The intervention group perceived a greater positive change in importance at post than the control group ($p = .011$). These students also reported an increased perceived change in

implication in Spirituality from pre to post (p = .045), being this change in implication at post significantly greater than in the control group (p = .005).

As for Citizenship/Community, we observed a significant effect of time in implication, $F(2, 41.208) = 3.327$, p = .046. Both groups tended to increase their implication in Citizenship from post to follow-up, however, only in the intervention group, this change was significant (p = .014). Besides, the intervention group presented an increase in the perceived change of importance from pre to post (p = .004), while there was no difference in the control group ($p > .05$).

The area of Physical Care presented several findings. For instance, there was an effect of time in implication, $F(2, 39.593) = 4.379$, p = .019. Both groups reported a greater implication in Physical Care at pre-test than at post-test and follow-up. Nevertheless, post-hoc pairwise comparisons indicated that differences in Physical Care were not significant ($p > .05$). However, there was an effect of group and time in the perceived change of personal implication, $F(1, 39.852) = 4.692$, p = .036, and $F(1, 40.535) = 6.937$, p = .003, respectively. The two groups perceived a significant reduction in the implication in Physical Care from pre to post. This reduction was significantly higher in the control group than in the intervention group (p = .041).

Finally, there was an interaction effect in the perceived change in implication in the area of Myself, $F(2, 40.681) = 4.663$, p = .015. The intervention group perceived more change in the implication in themselves from pre to post (p = .041). This perceived change was significantly higher in the intervention group than in control (p = .003). Similar results were found in the perceived change of self-importance. Participants in the intervention group perceived a positive change in the importance of themselves at post significantly higher than those in control (p = .014). However, this perceived change in importance decreased in the intervention group from post to follow-up (p = .014).

No significant results were found in the area of Parenting, $p > .05$. These findings were expected as the vast majority of participants did not have children.

Table 18. Descriptive statistics by experimental condition in VLQ-PC (importance, personal implication, and VLQ-PC composite).

	Intervention *M* (*SD*)			**Control *M* (*SD*)**		
	pre (*n* = 25)	**post (*n* = 25)**	**FU (*n* = 23)**	**pre (*n* = 22)**	**post (*n* = 18)**	**FU (*n* = 15)**
Importance						
Family	8.84 (1.82)	9.24 (1.42)	9.41 (0.91)	8.68 (2.32)	9.41 (1.28)	9.47 (1.12)
Intimate relat.	7.36 (2.53)	7.76 (2.22)	7.96 (2.65)	7.45 (2.58)	8.17 (2.50)	7.87 (2.45)
Parenting	7.47 (3.69)	6.80 (3.90)	5.68 (4.35)	7.50 (3.58)	6.06 (3.98)	6.67 (4.22)
Friendship	8.20 (1.68)	8.56 (1.23)	8.26 (1.74)	8.09 (1.74)	8.17 (1.50)	8.47 (1.25)
Work	7.17 (2.31)	6.92 (1.89)	7.10 (1.89)	8.18 (1.59)	7.78 (1.35)	8.00 (1.47)
Education	8.56 (1.16)	8.12 (1.62)	8.32 (1.56)	9.05 (1.00)	8.78 (1.00)	9.20 (0.94)
Recreation	7.96 (1.60)	8.13 (1.03)	7.32 (1.56)	8.14 (1.58)	7.56 (1.50)	8.40 (1.12)
Spirituality	6.29 (2.84)	6.64 (2.61)	6.38 (3.12)	5.05 (3.05)	4.28 (3.20)	4.93 (2.81)
Citizenship	7.16 (1.70)	6.72 (2.01)	6.36 (1.81)	6.86 (2.05)	6.61 (2.45)	7.20 (1.70)
Physical care	7.48 (1.53)	7.12 (1.67)	7.00 (2.02)	7.14 (2.27)	7.33 (2.40)	7.80 (1.47)
Myself	9.00 (1.73)	8.44 (1.87)	9.14 (1.17)	9.05 (1.09)	8.72 (1.40)	8.87 (1.12)
Personal Implication						
Family	6.40 (2.66)	6.88 (2.35)	7.57 (1.85)	7.41 (2.28)	7.22 (2.36)	7.80 (2.27)
Intimate relat.	5.32 (3.51)	5.36 (3.45)	7.13 (3.44)	5.86 (3.41)	5.78 (3.17)	6.20 (3.21)
Parenting	1.89 (2.08)	1.71 (2.02)	1.88 (2.16)	1.55 (1.76)	1.41 (1.70)	1.38 (1.39)
Friendship	6.84 (1.97)	6.92 (2.08)	6.26 (2.94)	7.23 (2.00)	6.78 (2.26)	6.67 (2.29)
Work	4.92 (2.93)	6.05 (2.95)	6.71 (2.59)	5.95 (2.75)	5.82 (3.52)	6.20 (3.45)
Education	6.80 (2.02)	7.16 (2.34)	7.26 (2.58)	6.77 (2.29)	8.61 (1.19)	7.86 (2.38)
Recreation	6.28 (2.57)	5.28 (3.02)	5.96 (2.57)	7.14 (1.67)	5.94 (2.69)	6.79 (2.26)
Spirituality	3.48 (2.89)	4.28 (2.96)	3.86 (3.52)	3.68 (3.00)	2.18 (2.40)	2.60 (2.16)
Citizenship	4.24 (2.50)	3.72 (2.51)	5.35 (2.53)	4.59 (2.63)	4.11 (2.63)	5.07 (2.25)
Physical care	5.88 (2.24)	5.08 (2.60)	5.04 (3.00)	6.09 (2.58)	5.00 (2.72)	5.93 (2.58)
Myself	6.80 (2.60)	6.44 (3.16)	6.35 (2.62)	7.33 (2.06)	6.50 (1.79)	6.80 (1.86)
VLQ-PC composite	45.81 (13.72)	45.72 (15.30)	49.35 (17.89)	48.76 (12.88)	46.55 (13.18)	49.72 (13.53)

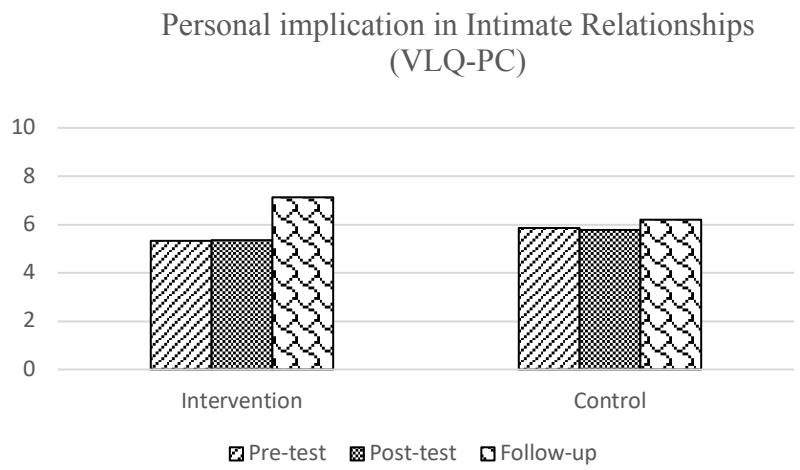

Figure 5. Graphic representation of the VLQ-PC scores in personal implication in Intimate Relationships. In the intervention group, implication in Intimate Relationships increased significantly from pre to follow-up (p = .037).

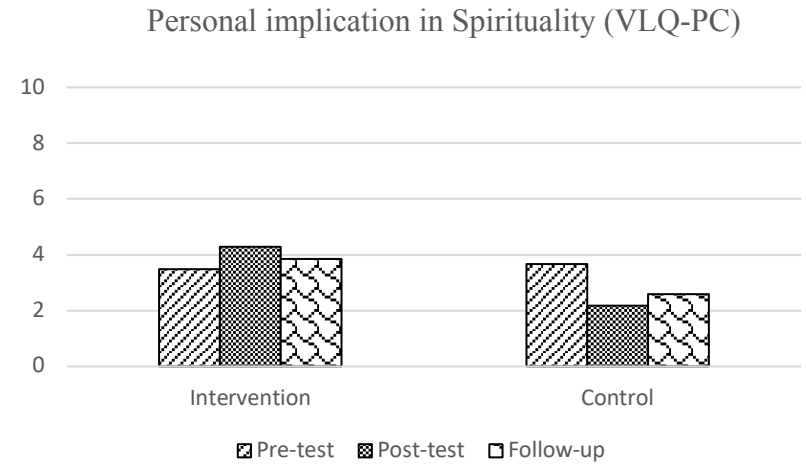

Figure 6. Graphic representation of the VLQ-PC scores in personal implication in Spirituality. A significant interaction effect was found between time and group (p = .036). The intervention group was significantly more implicated in Spirituality at post-test than the control group (p = .034). They also gave more importance to this area at post than the control group (p = .014).

Table 19. Descriptive statistics in VLQ-PC (perceived changes in importance and implication).

	Intervention *M* (*SD*)			Control *M* (*SD*)		
	pre (*n* = 25)	**post (*n* = 25)**	**FU (*n* = 23)**	**pre (*n* = 22)**	**post (*n* = 18)**	**FU (*n* = 15)**
Change in Importance						
Family	0.16 (1.62)	1.52 (1.36)	1.00 (1.54)	0.86 (1.58)	0.24 (0.75)	1.47 (1.73)
Intimate relat.	0.00 (1.83)	0.80 (1.15)	1.18 (1.74)	0.18 (1.99)	0.00 (0.87)	0.87 (1.25)
Parenting	0.14 (0.48)	0.32 (0.82)	-0.05 (1.18)	-0.10 (0.44)	-0.18 (0.73)	-0.27 (1.83)
Friendship	0.80 (1.50)	0.88 (1.09)	0.19 (0.68)	0.68 (1.67)	0.12 (0.68)	0.40 (1.12)
Work	0.42 (1.44)	0.09 (0.81)	0.60 (1.27)	0.50 (1.22)	0.29 (0.69)	0.20 (1.15)
Education	1.04 (1.46)	0.80 (1.19)	1.18 (1.97)	0.77 (1.31)	0.53 (0.94)	1.07 (1.33)
Recreation	0.44 (1.39)	0.60 (1.22)	0.14 (1.04)	0.68 (1.25)	0.53 (0.94)	0.33 (0.98)
Spirituality	0.12 (1.45)	0.76 (1.36)	0.64 (1.25)	-0.27 (1.42)	-0.18 (0.81)	0.13 (1.12)
Citizenship	-0.16 (0.85)	0.42 (0.78)	0.10 (0.31)	0.00 (0.32)	0.06 (0.25)	0.07 (0.47)
Physical care	0.84 (1.21)	0.58 (0.97)	0.73 (1.32)	0.64 (1.18)	0.06 (1.09)	0.93 (1.16)
Myself	0.80 (1.38)	1.68 (1.65)	0.77 (1.19)	0.55 (1.10)	0.35 (0.86)	0.67 (1.45)
Global mean	0.42 (0.61)	0.80 (0.66)	0.61 (0.70)	0.42 (0.55)	0.17 (0.23)	0.54 (0.49)
Change in Implication						
Family	0.36 (1.65)	1.40 (1.12)	1.27 (1.88)	1.18 (1.59)	-0.11 (1.49)	1.33 (1.68)
Intimate relat.	0.00 (1.89)	0.40 (1.15)	1.23 (1.71)	0.50 (2.02)	-0.22 (1.66)	0.87 (1.46)
Parenting	0.00 (0.35)	0.00 (0.00)	0.06 (0.25)	0.11 (0.46)	0.00 (0.00)	0.00 (0.00)
Friendship	0.36 (1.22)	0.80 (0.96)	0.32 (1.32)	0.73 (1.16)	0.11 (1.08)	0.40 (0.91)
Work	0.04 (1.68)	0.48 (1.04)	0.86 (1.19)	0.27 (1.32)	0.71 (1.16)	0.67 (1.29)
Education	0.68 (1.25)	0.92 (1.32)	1.23 (1.54)	0.95 (1.40)	1.78 (1.48)	1.53 (1.51)
Recreation	0.20 (1.35)	0.24 (0.83)	0.32 (1.36)	0.68 (1.04)	-0.06 (1.30)	-0.20 (1.08)
Spirituality	0.17 (1.03)	0.68 (0.75)	0.41 (1.68)	0.23 (0.92)	0.07 (0.46)	0.07 (1.03)
Citizenship	0.00 (0.76)	0.33 (0.87)	0.19 (0.51)	0.05 (0.67)	0.06 (0.25)	0.13 (0.52)
Physical care	1.12 (1.01)	0.50 (0.72)	0.55 (1.50)	0.55 (1.26)	-0.11 (1.28)	0.27 (1.53)
Myself	0.52 (1.12)	1.32 (1.38)	1.05 (1.50)	0.57 (1.21)	0.00 (1.19)	0.53 (0.99)
Global mean	0.34 (0.52)	0.65 (0.51)	0.70 (0.63)	0.53 (0.57)	0.21 (0.47)	0.51 (0.63)

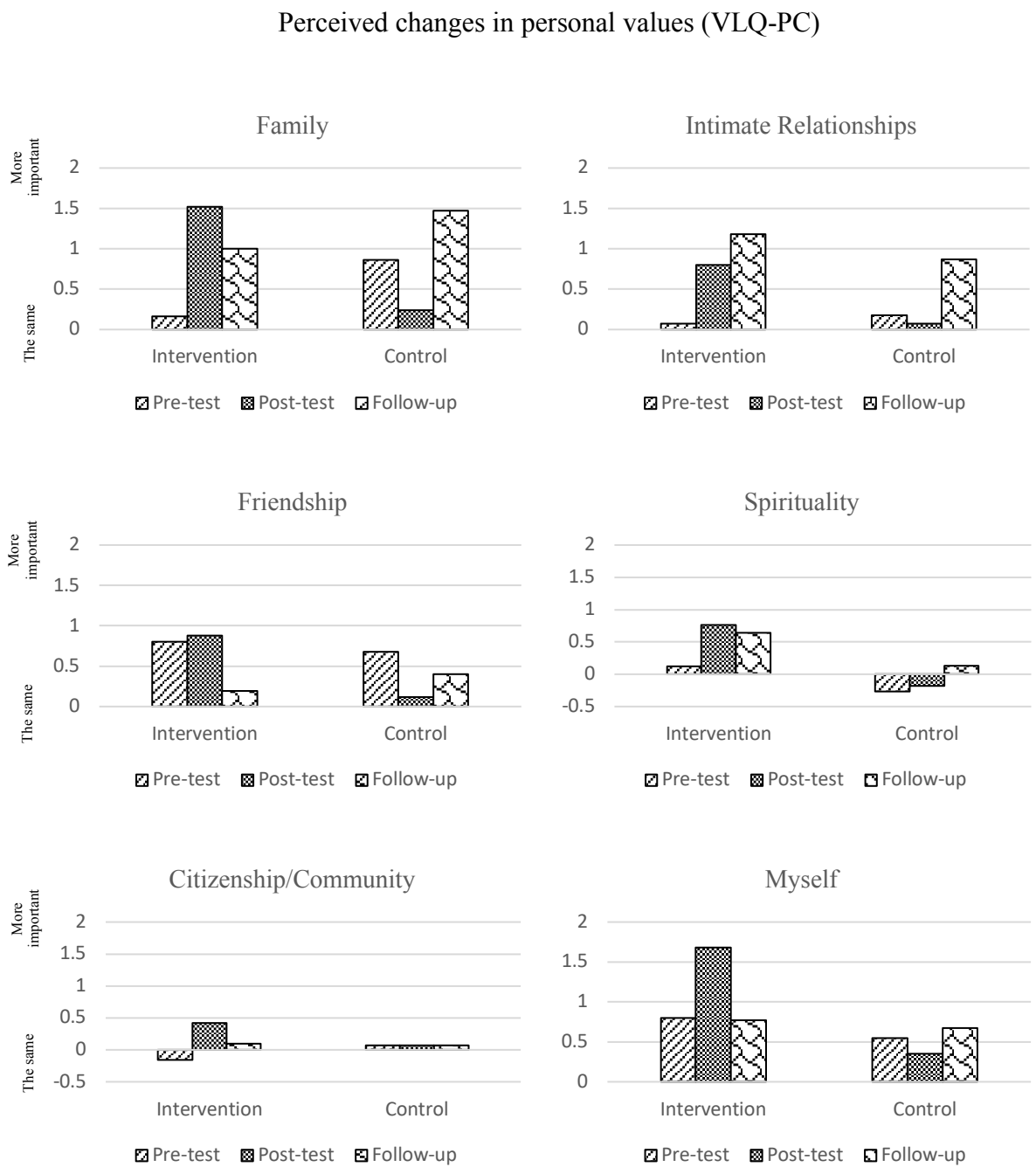

Figure 7. Graphic representation of the perceived change in the importance of personal values (VLQ-PC). Negative scores in Spirituality and Citizenship represent perceived decreases in importance. Perceived changes in the importance of Family, Intimate Relationships, Friendship, Spirituality, and Myself were significantly higher at post-test in the intervention group as compared to the control group (p = .005, p = .020, p = .018, p = .011, and p = .014, respectively). As for

Citizenship, the intervention group gave significantly more importance to this area from pre to post (p = .004). Students in the intervention also perceived a significant change in the importance of Intimate Relationships from pre to follow-up (p = .033).

5.4.4. Prosociality and meaning in life

Regarding altruistic values measured by the AHO, a significant effect of time, $F(2, 42.426) = 3.417$, p = .042, was observed. AHO scores increased significantly from pre to post in the intervention group (p = .012), but not in the control group ($p > .05$, see Table 17 and Figure 8). Empathetic concern (EC) also presented an effect of time, $F(2, 39.407) = 8.814$, p = .001. However, it significantly increased from pre to post in both groups (intervention group, p = .016; control group, p = .014).

Others-focus, which was a process variable measured only in the intervention group, increased from pre to post and follow-up (p = .029, p = .027, respectively, see Table 17 and Figure 9). In this group, the axis self-focus versus others-focus also tended to increase towards the others-focus side, but this change was not significant ($p > .05$). Sixteen participants selected zero in their ideal future at pre-test (M = 1.20, Table 17). Zero represents a balance between self-focus and others-focus. This means that for them, the increase in contributing to others' welfare was not incompatible with maintaining a general focus on themselves. Indeed, scores in the self-focus scale did not significantly differ over the time of the study ($p > .05$).

In line with the others-focus scale, global meaning in life (process variable measured in a 1-100 scale) in the intervention group significantly increased from pre to post and follow-up (p = .022, p = .037, see Table 17 and Figure 9).

We also compared the ideal meaningful lives in the students' deathbed with and without impacting positively on others (during the individual sessions). Scores in meaning in life decreased from 96.29 (out of 100) in the ideal life to 27.00 when the component of benefiting others was removed ($p < .001$). This strong reduction indicates that prosociality was a major source of meaning in their ideal lives, and without this aspect, their lives would be practically meaningless.

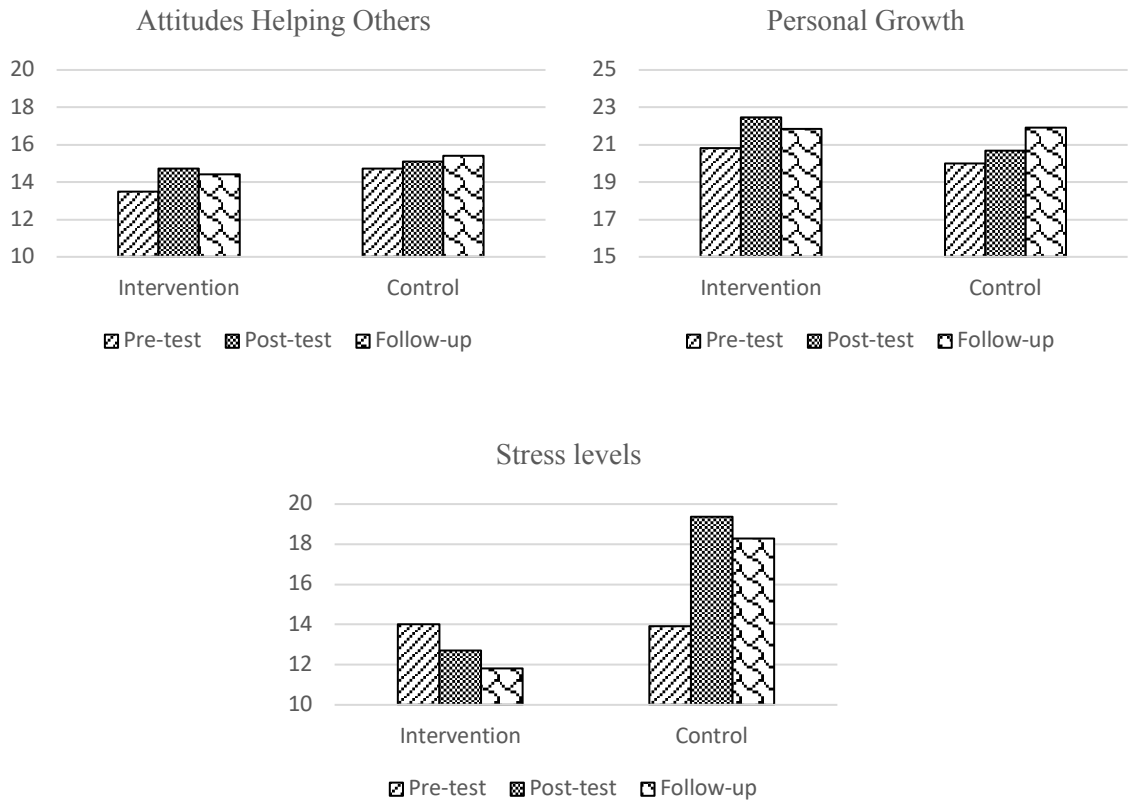

Figure 8. Graphic representation of the scores in Attitudes Helping Others (AHO), Personal Growth (PG), and Stress levels (DASS-21) in both groups. AHO and PG scores increased significantly from pre to post only in the intervention group ($p = .012$, $p = .035$, respectively). This group reported higher personal growth at post than the control group ($p = .010$). Stress levels at post were significantly lower in the intervention group than in the control group ($p = .014$). In the control group, stress increased significantly from pre to post ($p = .003$), while in the intervention group remained stable ($p > .05$).

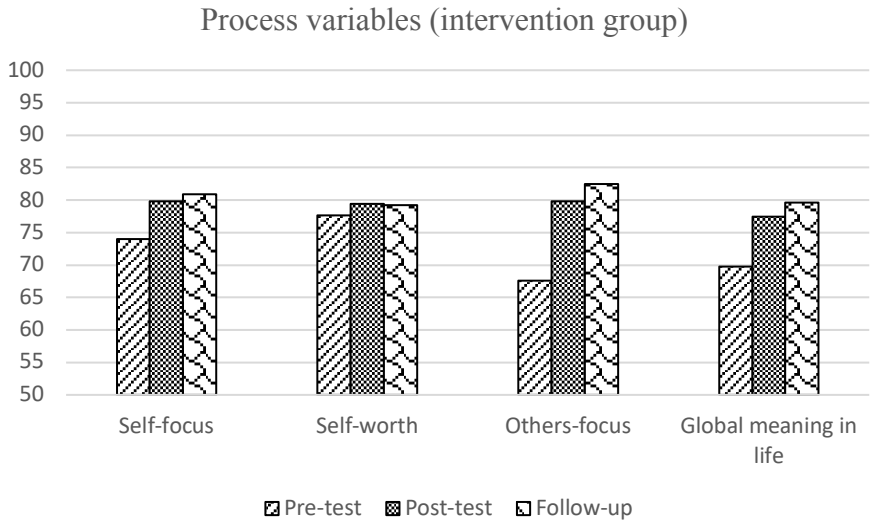

Figure 9. Graphic representation of the scores in the process variables of Self-focus, Self-worth, Others-focus, and Global meaning in life (intervention group only). Significant increases were observed from pre to post and follow-up in the case of Others-focus (p = .029, p = .027, respectively) and Global meaning in life (p = .022, p = .037, respectively).

5.4.5. Personal growth, self-worth, and psychological distress

There was a significant effect of time in the case of Personal Growth (Ryff's scale), $F(2, 36.484) = 6.688$, $p = .035$. Both groups tended to increase their Personal Growth over time (see Table 17 and Figure 8). However, post-hoc pairwise comparisons showed that this increase was significant only in the intervention group from pre to post (p = .035). These students reported higher personal growth at post than the control group (p = .010). However, in the intervention group we found no significant difference in Self-worth (value as a person) over time, $p > .05$.

With respect to psychological distress, no significant results were observed in the DASS-21 global scores, depression, and anxiety, $p > .05$. However, there was a interaction effect in the case of stress levels, $F(2, 40.500) = 5.040$, $p = .011$. The levels of stress at post

were significantly lower in the intervention group than in the control group ($p = .014$, Table 17 and Figure 8). While in the control group the stress increased from pre to post (exams period, $p = .003$), in the intervention group remained stable ($p > .05$).

5.4.6. Qualitative data

In addition, we obtained qualitative data from 23 participants in the intervention at post. As can be seen in Table 20, responses were grouped into six categories. Agreement between two observers for these categories was from moderate to almost perfect, as Cohen's kappa coefficients ranged from .62 to .82.

The vast majority of students ($n = 22$) reported an increase of *interpersonal closeness*. In this category, participants mentioned aspects such as being more open and confident towards others ($n = 13$), overcoming psychological barriers when relating to other people ($n = 11$), being more empathic and finding similarities between others and themselves ($n = 9$), feeling more connected to other human beings ($n = 8$), or being more assertive ($n = 3$). The second major category was *identity and personal growth* ($n = 19$). Students indicated to have gained self-knowledge (n=12), grown personally ($n = 6$), improved their confidence in themselves ($n = 2$), and become more authentic ($n = 2$). The third most mentioned benefit from the intervention was *values clarification* ($n = 10$). Participants reported to have more clear what is important in their lives, and six of them explicitly mentioned an increase in the importance of contributing to others. Besides, seven participants reported that they had learned important things for their professional career as future psychologists. Finally, 17 participants explicitly mentioned to *be satisfied with their experience in the study*, and 11 of them reported a *rapport with the therapist*. Several examples of each of these categories are shown in Table 20.

Table 20. Qualitative results mentioned by participants in the intervention at post (n = 23).

Major areas	Examples	*n* (%)
Interpersonal closeness (openness and confidence in others, overcoming interpersonal barriers, empathy and finding similarities in others, deeper human connection, assertiveness)	"I have seen that many people think like me and have the same concerns", "at the end of the day, we are not so different each other, but the same essence with different experiences", "it made us feel closer to each other…we had three years together (in class), but they did not serve to know each other", "the true is that these sessions make you open yourself and meet people deeper", "from the beginning, I've always been shy when relating to others, but thanks to these sessions, I'm a bit more extrovert", "at the end of this intervention, I see myself much more empathetic and with much more motivation to help others, and above all, more capable in front of unknown people", "I'm sure that many people in our environment, whom we don't even greet, they are as worthy as to not lose the opportunity to meet them because of shy or fear of what they will think about us", "I really believe that we have overcome social barriers that didn't allow us to open each other".	22 (95.65)
Identity and personal growth (gaining self-knowledge, growing personally, having more self-confidence and authenticity)	"I have learned to understand myself better", "I feel stronger", "thanks for changing the perception of myself", "this has been not only a nutrient for the maintenance of my person, but also for my development", "I'm more confident of myself and more willing to do things for me", "this experience has helped me to continue growing, being more aware of my limitations", "it has helped me to see myself from others' eyes and get a bit closer to the person I want to be".	19 (82.61)
Values clarification (a clearer sense of what is important in life, and the importance of contributing to others)	"I reaffirmed in what I already thought, the importance of people surround me, before the things such as work or studies", "I have found out areas of my life I never supposed, in consequence, I daily value more the things that really matter to me", "it has made me more aware of those things and people that really matter to me", "it has given me humanity, since it has demonstrated that we all are humans with our own problems, and we can make our contribution to help others", "from this experience, I take with me a higher emotional implication and contribution to others and myself".	10 (43.48)

Table 20 (cont.). Qualitative results mentioned by participants in the intervention at post (n = 23)

Major areas	Examples	*n* (%)
Valuable learning for their professional career	"These sessions have made me have more clear my calling for clinical psychology", "I've always ruled out focusing on the clinical field, and you have got leaving me with doubts, thanks!", "for me, it has been one of the most beautiful and gratifying experiences in my career", "in an academic level, I feel more motivated to continue learning about the wonderful area of psychology in a much more practical way that any other class", "I have more hopes in psychology".	7 (30.43)
Satisfaction with the intervention	"Thank you so much for this activity and the change it has produced in some of us", "in general, it has been a enriching experience", "honestly, I had a lot of fun. Hopefully, there were many more sessions. Congratulations!", "A 10 experience".	17 (73.91)
Rapport with the therapist	"With David (the therapist), I felt very comfortable and understood…he is a person that when you speak with him, you feel as if you knew each other from long ago", "the therapist has done a great job, knowing how to create a comfortable and pleasant atmosphere, and being close, facilizing in this way that we open ourselves", "what I felt and the change you produced on me, speaking about your person, for me is everything", "you are a great psychologist and, above all, a worth-meeting person. Thanks for being so human".	11 (47.82)

5.5. Discussion

The general aim of this study was to create an intervention to promote meaning in life through death awareness and prosociality in intimate relationships. Five sessions were designed based on the previous work of this dissertation and the protocols by Wong (2012) and Aron et al. (1997). Sessions included a group introduction to Frankl's and Wong's theories of meaning, a group guided meditation to imagine receiving a cancer diagnosis, an individual conversation about existential topics, and two group sessions with different dynamics aimed to encourage interpersonal closeness and prosociality. The intervention was implemented in a group of 25 university students and compared with a control group

with similar characteristics. Four hypotheses were tested to evaluate the impact of the intervention using several measures.

H1 predicted that the intervention would increase self-transcendence and prosociality, which represent the values and actions aimed to contribute to others' welfare. The results confirmed our expectations. Students in the intervention group significantly increased their scores in self-transcendence (as measured by PMP-B) from pre to post, while it remained unchanged in the control group. The same phenomenon was observed in AHO scores, showing that altruistic values only increased in the intervention group from pre to post. Furthermore, we observed that the experimental group significantly increased their others-focus after the intervention, and this increase was maintained at follow-up, four months later. In addition, perceived changes in VLQ-PC indicated that students in the intervention experienced increases in the importance of social areas such as family, intimate relationships, friends, and citizenship/community from pre to post, which was not found in the control group. However, among these areas, a significant perceived increase in importance from pre to follow-up was only observed in intimate relationships. Qualitative data also showed that many students gave more importance to the benefit of others (e.g., "it has made me more aware of those things and people that really matter to me", "from this experience, I take with me a higher emotional implication and contribution to others and myself").

Overall, these findings indicate that the intervention produced improvements in the areas of self-transcendence and prosociality, making students more aware of the importance of contributing to others' lives. To date, this is one of the few existing protocols designed to promote prosociality and self-transcendence (for further protocols, see Klein, 2016; Van Tongeren et al., 2016). A similar intervention has been recently developed by Baumsteiger (2018, 2019), including activities such as watching an elevating video, enacting prosocial behavior, and reflecting about one's core values and actions. However, in comparison with our intervention, that protocol has not demonstrated changes in prosocial behavior beyond one month, and it did not affect meaning in life.

H2 predicted that the experimental group would be more involved in their close relationships than the control group. This hypothesis was also confirmed by our results in

the case of intimate relationships, and it was partially supported in the case of family, friends, and community. VLQ-PC scores regarding personal implication in intimate relationships increased from pre to follow-up in the intervention group, and they were significantly higher than in the control group at follow-up. Likewise, implication in citizenship/community significantly increased in the intervention group from post to follow-up. However, at post-test, no significant differences were found on these measures. One possible explanation is that at post-test, all students were starting their final exams and, therefore, may have had reduced time for relationships and community activities. A second explanation could be that the interpersonal knowledge gained during the intervention was applied and observed a few months later, and not just one week after the intervention concluded (post-test).

Nonetheless, we also found significant results at post regarding relationships. For instance, students in the intervention group perceived an increase in the implication in family and friends from pre to post, as compared to the control group. Similarly, PMP-B scores in intimacy, which represent the quality of intimate relationships, significantly decreased in the control group over time, while they tended to increase in the intervention group, although not significantly. Furthermore, the qualitative analysis showed that almost all participants in the intervention experienced higher levels of interpersonal closeness in their lives at post-test. For instance, one student wrote: “from the beginning, I’ve always been shy when relating to others, but thanks to these sessions, I’m a bit more extrovert”. Another student reported: “I really believe that we have overcome social barriers that didn’t allow us to open each other”.

Altogether, these findings indicate that our intervention encouraged the involvement in close relationships, particularly in intimate relationships which presented enduring changes. Most of the previous studies on intimacy focused on strengthening already existing couple relationships (for a review, Kardan-Souraki et al., 2015). Very few of them attempted to generate intimacy among people without a previous close relationship (see Aron et al., 1997). We hope that our intervention inspires future studies in this direction.

In line with H3, one of the central aims of this intervention was to promote meaning in life. As predicted, our study demonstrated that meaning in life was enhanced as a consequence of promoting prosociality and death awareness. For instance, PMP-B global scores significantly increased in the intervention group from pre to post, and this difference was also significant as compared to the control group, who did not show significant differences over time. The enhancement of PMP-B scores in the intervention group was preserved after four months (although no significant difference was found with pre scores). Likewise, global meaning in life increased significantly from pre to post and follow-up in the intervention group. This change in meaning in life was also supported by the perceived changes in personal values (VLQ-PC). Students in the experimental group reported a significant values change, giving more importance to different life areas and being implicated in these areas after the intervention. Of note, the experimental group gave less importance to recreation at follow-up than the control group. This can be interpreted as the result of prioritizing other fundamental values in their lives beyond the simple stimulation and entertainment. The results regarding perceived changes in values provide incremental evidence of the validity of the VLQ-PC. Qualitative data showed that almost half of the participants explicitly mentioned to have clarified their values after their intervention (e.g., "I have found out areas of my life I never supposed, in consequence, I daily value more the things that really matter to me", "it has made me more aware of those things and people that really matter to me").

The results mentioned above support the prosocial and self-transcendental character of meaning in life. By promoting death awareness, prosociality, and intimacy in our sample of university students, their meaning in life significantly increased. Interestingly, students reported that their lives on their imagined deathbeds would be meaningless if they had no positive impact on others. According to authors such as Frankl (1984), Wong (2014), and Seligman (2002), meaning in life is related to finding a purpose in life that contributes to others' welfare. Recent findings indicate that the meaning component of mattering, which is linked to self-transcendence, is the major precursor of people's meaningfulness judgments (Costin & Vignoles, 2020). However, despite the theoretical link between prosociality and meaning in life, there are very few experimental

studies showing a causal relationship between these variables (Klein, 2016; Van Tongeren et al., 2016), and they do not focus prosociality on close relationships. Additionally, we have observed a lack of experimental studies demonstrating the usefulness of death awareness to promote meaning in life (e.g., Simon et al., 1998). Our findings therefore call for a greater inclusion of death awareness, prosociality, and intimacy in meaning-centered interventions in order to make them more effective in enhancing meaning.

An additional area that was fostered by the intervention was spirituality. Spirituality is understood as "the way in which people understand their lives in view of their ultimate meaning and value" (Muldoon & King, 1995, p. 336). Participants in the intervention group gave more importance to spirituality and were more involved in this area at post than the control group. This can be due to the work with existential topics such as death, self-transcendence, and the ultimate purpose in life included in the cancer session and the existential individual conversation. There is also evidence relating spirituality and prosociality (Bonner et al., 2003; Jenney, 2010; Li & Chow, 2015). In this sense, our study provides additional evidence showing that these constructs are related to each other.

The final hypothesis (H4) predicted that participants in the intervention would benefit from higher levels of personal growth and lower psychopathological symptoms than the control group. Personal growth increased from pre to post in the intervention group, being significantly higher than in the control group at post. However, no inter-group differences were observed at follow-up. This suggest that students may have experienced personal growth after the intervention but these effects were short-term. Perceived changes of VLQ-PC also supported some impact on personal growth. The intervention group perceived an increase in the importance and implication in themselves from pre to post, and these perceived changes at post were significantly higher than in the control group. Similarly, when asked about their subjective experiences, the majority of the participants in the intervention group mentioned development in their self-knowledge and personal growth (e.g., "I have learned to understand myself better", "it has helped me to see myself from others' eyes and get a bit closer to the person I want to be").

In line with previous studies, these results highlight the personal benefits of prosociality (Nelson et al., 2016; Post, 2007). These findings also support the idea that self-

realization is a by-product of self-transcendence (Frankl, 1988; Koltko-Rivera, 2006; Maslow, 1996; Wong, 2014). The focus of the exercises in the intervention was the encouragement of death-awareness and the importance of helping and connecting with others. Nevertheless, this was not incompatible with the development of the self, rather the contrary, it served to make participants growth personally and value themselves more. We observed that self-focus and self-worth did not significantly changed as a consequence of promoting others-focus. There is the spread misconception that self-transcendence and altruism involve the loss of oneself in benefit of others. However, prosociality and self-transcendence are voluntary in essence. Exercises in our intervention were not designed to force people to contribute to others, instead, we induced students to be more prosocial based on their own personal values. We argue that maintaining a compatibility between the self and others can make interventions more effective, above all, in younger generations who are characterized by increased individualism (Sirias et al., 2007; Twenge, 2010), particularly in western cultures (Le & Levenson, 2005). For similar considerations, see Dambrun and Ricard (2011), and Nelson et al. (2016).

Finally, our results suggested that the intervention had an impact of stress levels, although not on depression or anxiety. The impact on stress levels was one of the most pronounced effects of the intervention. Stress of undergraduates typically increases during the final exams period, as was observed in the control group at post. However, in the intervention group, stress levels remained significantly stable from pre to post. In a similar vein, participants in the control condition perceived a greater reduction in their physical care at post than the intervention group. The promotion of areas such as meaning in life, personal growth, prosociality, and intimacy may have acted as a buffer against stress levels during the final exams, while encouraged physical care. For instance, previous studies have found a negative relationship between meaning in life and negative affect (Brouzos et al., 2016), while it has been positively associated with health behaviors (Brassai et al., 2012). Similarly, Raposa et al. (2016) reported that prosocial behavior mitigated the effects of stress in everyday life.

5.5.1. Limitations and conclusion

Besides its significant contributions, the present study has several limitations. We used a convenience sample method. The sample size was small and females were overrepresented, which limits the generalization of the results. The application of the intervention in different populations with bigger samples may provide more robust evidence about the effectiveness of the protocol to promote meaning, prosociality, and intimacy. Some of the perceived changes in personal values were not reflected on the VLQ-PC scores of importance in each area evaluated in the present. It could be also argued that perceived changes in the intervention group were due to social desirability; students tried to respond accordingly to the researcher's expectations. Finally, a follow-up longer than four months would have provided important information about the long-term effects of the intervention.

Despite the above-mentioned limitations, this study presents a novel intervention with promising results. The diverse findings observed in the intervention group in comparison with the control group indicate that our protocol enhanced meaning in life based on the encouragement of death awareness and prosociality in close relationships. Interventions of this kind can be particularly worthy in our society, which is marked by death denial, increasing individualism, as well as an increasing lack of prosociality and interpersonal closeness.

Chapter 6*

Learning to live through death

Perhaps the deepest reason
we are afraid of death is
because we do not know
who we are.

SOGYAL RINPONCHE
The Tibetan Book of Living and Dying

As a final point, I wanted to dedicate a chapter to reflect on the topic of death and its relationship with meaning in life. Death awareness has been one of the major areas involved in Study 2 and Study 3. In this chapter, I deepen in the topic providing evidence and personal examples to support the existential positive approach.

Death is one of the biggest taboos in our culture. Everyone agrees that they are going to die one day, but only a few feel comfortable to talk about their own death. Although it is one of the only certainties that human beings have, western cultures normally avoid thinking about mortality. Generally, it is a topic shunned by society, especially hidden from children. For example, when my little brother was four years old, he revealed to me that he had realised that one day he would die as his grandparents died. His logic was simple: "If older people die and I will get older, I will die too". My natural response to him was, "Yes, you and I will die one day". But, he wanted to hear a different response.

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He broke into tears, saying that he did not want to die. While I was trying to normalise his emotions, my aunt heard my brother crying and came to see what was going on. “David told me that one day I am going to die”, my brother complained. My aunt looked at me as if I was mad and called me “stupid” in front of my brother. Immediately, my father joined my aunt to console my brother by telling him that he would never die. So far, several years later, he usually avoids speaking about death. I’ve seen a number of similar situations between children and their parents regarding the topic of death.

Why do we hide death from our children? Is death essentially something bad? Are we teaching people in our culture how to face their own death? Is there any worthy lesson in death to be learned? In comparison to many death-affirming eastern societies (Ivtzan et al., 2015; Rinpoche, 1992), why is death a taboo in western culture? The title of this chapter, “*Learning to live through death”,* has a dual meaning. Firstly, I introduce the psychological experience of dying and make a brief proposal on how to live meaningfully through the last moments of one’s own life. Secondly, I discuss how useful death awareness may be to live meaningfully at all life stages.

6.1. The psychological experience of dying

Dying might be one of the most difficult experiences in life. The feeling of physical incapacity, pain, and anxiety are common challenges people pass through. Dying can also be considered for many people to be the end of one’s existence, at least physically and consciously. It is letting go of important things and loved ones forever. Worries about the unknown afterlife are also common. Besides, end-of-life is a stage of making a final judgement about one’s life as a whole.

In a self-centered society like the west, dying can be interpreted as the end of everything. Nowadays, the major difficulty in dying for many people is accepting the end of their self. If the individual, the self, is the major focus in life, then death will be more likely considered to be the end of the world, a chaotic border that produces panic. According to Wong (2014), dying will probably be experienced as meaningless and worthless if the focus of one’s life has been inward only towards personal happiness and

individual success. This meaningless death has been evidenced in terminal cancer patients. According to several studies, many terminally ill cancer patients suffer from a loss of dignity and meaning in life, which results in the desire for a faster death. For instance, about 17% of cancer patients report a strong desire to terminate their lives due to depression, hopelessness, and loss of meaning rather than pain (Breitbart et al., 2000). Chochinov et al. (2002) observed that 47% of patients in their last months of life reported a loss of a sense of dignity.

However, is death the end of everything? Should our meaning in life be so self-focused? Human beings share a spiritual dimension (Frankl, 1984; Wong, 2014). Spirituality is expressed as the human propensity toward self-transcendence (Wong, 2014). Wong (2014) suggests that to cultivate spirituality and self-transcendence it is necessary to redirect focus from self-interest to something bigger and beyond ourselves, towards others. As we discussed in Chapter 5, Frankl also understood that the question about meaning in life and self-transcendence is intrinsically the same. When we globally speak of one's meaning in life, we refer to what is the mission, the function, of the whole of one's life in a bigger social context, it's about how to contribute to others (e.g., family, community, society).

In his later years, Abraham Maslow incorporated self-transcendence at the top of the hierarchy of human needs, higher than self-actualization (Koltko-Rivera, 2006; Maslow, 1996). Indeed, self-actualization can be considered as a by-product of self-transcendence (Frankl, 1981; Wong, 2014). From this perspective, death is not the end of everything, but rather it is the last step in one's life to serve a higher purpose. In other words, death may be the most authentic expression of self-transcendence. It is for that reason that spiritual care and meaning in life have been considered to be essential in palliative end-of-life care (Chochinov, 2006; Ellershaw & Ward, 2003; McClain et al., 2003).

6.2. Meaningful dying is to cultivate self-transcendence

A Buddhist maxim is that the best way to have a good death is by having had a good life, having learned how to transcend the ego and accept the impermanence of things (Rinponche, 1992). A life dedicated to following personal values, serving others, and contributing to society and humanity can facilitate a meaningful death. From this view, dying is a final worthy step towards authentic self-transcendence.

Nevertheless, not everyone has lived a meaningful life. Ware (2011) found that the top five regrets of people in their last days were: a) not having the courage to live a life true to themselves, b) working too hard, c) not having the courage to express their feelings, d) staying distant from loved ones, and e) not letting themselves to be happier. Those who live an egotistical life and ignore the consequences of their actions on others more likely will die alone without social support, suffering from meaningless death. The question here then is, "How can we have a meaningful death even if we have not lived a meaningful life?" The answer is: there is still time to be true to oneself and cultivate self-transcendence. The search for meaning is an ongoing unending process (Wong 2014). Meaning and purpose can be discovered in one's life, regardless of one's circumstances and health conditions (Frankl, 1984).

Based on Frankl's Meaning-Seeking Theory, Wong (2014) recognises that the search for meaning and self-transcendence has three levels: ultimate meaning, situational meaning, and life review. These three levels of meaning can also be found during end-of-life, of course, in the cases in which death is a non-accidental, conscious process.

6.2.1. Ultimate meaning

Ultimate meaning is based on the belief that life has intrinsic meaning and value regardless of circumstances. During the last days of life, ultimate meaning can be built on the belief that one's existence has had an intrinsic purpose and value. When dying, a clarifying question that one could ask oneself is: "Am I the most important thing in this world, or am I a part of something bigger and worthier?" To cultivate ultimate meaning in the face of

death is to keep faith and to accept that one is an expression of something bigger such as family, society, humanity, God (in case of being religious), nature, or the universe. To find ultimate meaning in death is also to keep the faith that things are going to be all right after one dies, that one's death is only one more step towards that higher value.

6.2.2. Situational meaning

Situational meaning is based on the belief that each moment has potential emotional, relational, and moral significance. Situational meaning can be found in the courage and acceptance we adopt towards suffering and death. Dying can be considered to be the final challenge in one's life. In the MMT, Wong (2008) maintains that the most effective way to protect oneself against death anxiety is to focus on living a vibrant, meaningful life. The last moments in life can be used as an opportunity to teach loved ones about one's learning in life, to leave one's legacy in others' hands, to say goodbye, express love, and to fusion in a peaceful connection with the rest of the universe. For example, in Buddhism, death is interpreted as an opportunity for a final meditation through which to achieve fusion with the rest of things and the final teaching in this life (Rinponche, 1992). Many people show an exemplar courage and meaning cultivation when dying to such an extent that they enhance their legacy through their attitude towards death.

6.2.3. Life review

Life review consists of assessing the meaning contents of our life as a whole, considering personal growth until death. When dying, one might remember one's achievements and failures, the positive impact on others, the courage maintained under challenging situations, among other significant life events. This life review can be shared with loved ones to leave a legacy. If someone realises on his deathbed that he has made many mistakes, have a low impact on others, or even harm them during his lifetime, there is still the last opportunity to apologize and help others not to make the same mistakes. As they say, a good way to

honour our ancestors is at least not to make the same mistakes that they did. It could also be that someone realises on his deathbed that he has not been true to himself during his life. In this case, he can try to live the death process as a real encounter with himself. For example, he could express for the first time his deepest feelings to others, behave authentically, and accept himself by understanding his life circumstances. Self-transcendence is intrinsically relational (Wong, 2016a), therefore, having others present to express one's final message (whether personally or through another communication via), leaving one's legacy, behaving in front of loved ones as a model of meaningful dying, is the best way to self-transcend (see Chochinov et al., 2011).

6.3. An example of meaningful dying: My grandfather

My maternal grandfather was a man dedicated to his family and his community throughout his entire life. He has been a role model in my family: a good person, cultivated, and a promoter of social values. I had the luck of living with him during my childhood since both of my parents used to work for long hours. The motivation towards my studies and profession comes from the enthusiasm of my grandfather for teaching me about his endless anecdotes full of intelligence and worth. He passed away nine years ago, at the age of 85. His last years and his death were a great example of courage and self-transcendence.

A few years before dying, when he started to feel that his energy was already lacking, he wrote his first book. He spent around two years collecting memories about the family history (starting from his grandparents until his grandchildren), dedicating a book chapter for each of his relatives and the significant events that had occurred in the family within the last century. He could even remember everything that his grandparents had told him when he was a child, such a prodigious memory. The reason behind writing this book was to leave his legacy before dying in order to make the family aware of where we came from, of our values and traditions. His ultimate purpose was to maintain the union and prosperity of all of us. He did not want to keep any drop of value and knowledge for the great beyond without it being shared with us. Writing the book was actually a way of creating his great beyond. Actually, each member of the family has a copy of the book.

When one of us lives in an existential crisis, reading my grandfather's book helps him to find meaning in life again. It is impossible to forget my grandfather; in fact, I visit his grave each time when there is a very happy or very dark event in my life.

In his last days, he showed huge courage and calm towards death. He never showed any sign of fear or worries about death in front of the family. Although he was aware that death was knocking on the door, he always said that everything was OK. He wanted to be a role model until the end. I remember the last one-on-one conversation I had with him. Taking into account the difficulties that he suffered during the Spanish post-war in order to study and dedicate himself to his favorite job, I asked him which profession he would have chosen given optimal conditions, what he was best at, and what his biggest passion was. After a period of silence, he answered: "Police inspector", with a huge smile on his face. Surprised at his response, I asked him why. His second reply was, "Son, I'm very good at understanding how people are, at analyzing their behavior, I have a good eye for people". The last words I said to my grandfather in life were, "You know, Grandpa, that is what I dedicate myself to". At that moment, his eyes shrank, looking at me with such beautiful tears.

This is what we refer to when we speak of self-transcendence. Self-transcendence is to lose yourself in the others, in the loved ones, for a greater value. I can affirm that I am the extension of my grandfather, and each person that carries my grandfather's values is a part of him. At his funeral, hundreds of people went to accompany him for the last time. He is an authentic example of self-transcendence and meaningful dying.

6.4. Awareness of death to live meaningfully

After reflecting on the psychological experience of dying and how to live meaningfully and courageously in the last moments of life, we still have a remaining question to answer: Is death awareness essentially bad? Should we avoid thinking about our own mortality? I will start with my personal experience.

Since I was a child, I have been interested in death. Questions such as "what is the afterlife like? Do ghosts exist? How old will I be when I die?" were frequent during my

childhood. I remember that I used to frighten my friends and family, talking about death and dead people. It was fascinating to see the intense emotional impact that this topic used to cause. I have always wondered, "Why do people avoid awareness of something that is so real and so human?" In my case, the normalization of death has given me a different life perspective. Death has acted as a mirror in which I could see the person I wanted to become. The awareness of my own mortality has clarified what is essential for me in life, how I want to contribute to society, and how to self-transcend. Before making important decisions, I have always imagined myself on my deathbed and asked myself if making that decision would make me feel proud of myself in that scenario. The answer immediately used to show up.

There is evidence showing that people who reject thinking about their own mortality, without a spiritual perspective, typically live a more superficial life, act more irresponsibly, are more disconnected from personal values, and generally are less happy and less resilient (e.g., Hoelterhoff & Chung, 2017; Holder et al., 2010; Long, 2012; Purdy, 2004; Taubman – Ben-Ari, 2011; Wong, 2000). On the other hand, the literature about posttraumatic growth and near-death experiences provides findings of the positive transformation that many people experience because of death reminders. For instance, in a review of the posttraumatic growth and illness-related trauma (mainly in cancer) literature, Hefferon et al. (2009) found that many patients, after their diagnosis, experienced a reappraisal of life and personal priorities, a stronger sense of themselves, and a new awareness of their own body. Other quantitative studies have also shown that a significant number of survivors of a life-threatening illness, survivors of natural disasters, war veterans, and bereaved spouses and parents reported a positive change in their personal strength, an opening of new possibilities in their lives, a greater connection with other people, more appreciation of life, and a spiritual change after such events (Calhoun & Tedeschi, 2006).

The present dissertation has also provided different insights on the role of death awareness in meaning in life. Firstly, in the cancer study, we observed how the diagnosis of this life-threatening illness produced a shift in personal values in the majority of patients. People became more aware of the importance of others and themselves in general.

Interestingly, those who adapted their meaning in life to the cancer experience statistically presented more meaning in life and spiritual well-being, among others. Possibly, patients showing this meaning adaptability responded to the idea of death with more acceptance than those with inflexible patterns. Future studies evaluating death acceptance and death anxiety could confirm this hypothesis.

Secondly, death awareness was one of the pillars of our meaning-centered intervention with university students. For instance, we implemented an exercise in which students imagined receiving a cancer diagnosis to clarify their personal values. Many students reported having a breakthrough during this exercise. In addition, during the individual sessions, we discussed with the students about their own death in the future to enhance their meaning in life. Their own mortality closeness was a useful tool to make undergraduates more aware of their self-transcendence and the prosocial character of their meaning in life. Previous studies have corroborated the power of death awareness in order to promote meaning and prosociality (Jonas et al., 2002; Simon et al., 1998). Indeed, mere thinking about the future can foster prosociality (Baumsteiger, 2017).

Helping people to find benefits from death awareness, enhance their meaning in life, and increase prosociality can be especially worthwhile in the age of COVID-19. Since the Second World War (1939-1945), humanity had not experienced a global crisis like the present. Several aspects of our existence, such as social interactions, work, economic stability, and physical health, have been seriously affected. Existential positive psychology can serve as a good umbrella to help people coping with this situation. We hope that the insights provided by this dissertation inspire interventions to promote meaning and personal growth in these times of adversity.

To conclude, Edward M. Forster (1910/2002, p. 171) wrote: “Death destroys a man, but the idea of Death saves him”. In death, there seems to be a valuable lesson about life, and vice versa. We cannot learn it if we turn our face away.

Chapter 7

General conclusions

The present doctoral dissertation is framed from existential positive psychology (PP2.0, Wong, 2009, 2011), a recently developed paradigm that integrates humanistic existential psychology and positive psychology. This paradigm defends the inclusion of suffering and other negative aspects of living (e.g., trauma, loss, illness, existential crisis, death) to develop a theory of psychological well-being. These aspects, although they are generally undesirable, can also be potentially beneficial. For instance, they can serve as promoters of personal growth and resilience. Among the basic principles of existential positive psychology are: a) the adoption of a realistic worldview that includes the positive side of life but also the inevitability of negative events, b) the importance of accepting, even embracing, painful emotions and thoughts, c) a dialectical coping with life demands, responding effectively to both positive events (through search and approach) and negative events (through adaptive avoidance and acceptance), and d) the inherent human quest for meaning in life that serves to transcend even the most adverse circumstances. Under this theoretical frame, the main aim of this dissertation was to advance research on the role of meaning in life in the psychological well-being of three populations: people with addiction, cancer patients, and university students.

In the case of addiction, we made a theoretical re-conceptualization based on the evidence, criticizing the dominant biomedical model that understands addiction as a chronic brain disease, and defending a meaning-centered approach. The biomedical model presents important limitations such as the poor external validity of laboratory studies (carried out mainly with rodents and people with chronic addiction), the assumption of genetic vulnerabilities that impairs prevention measures, and the low efficacy of pharmacological treatments in practice. However, according to a more pluralist perspective

of addiction, we observe different factors with existential character that provide a greater understanding of the addition development and maintenance. A number of studies indicate the influence of relational problem and social isolation, the evasion of guilt and responsibility, and the lack of meaning in life as underlying mechanisms responsible for developing and maintaining addiction. Addiction can be used as a mechanism to alleviate painful emotions and thoughts in the short-term and to supply the lack of positive emotions that cannot be naturally obtained from meaningful social interactions.

Under this perspective, we proposed the Meaning-Centered Approach (MCA, Wong, 2011b; Wong et al., 2013) for addiction recovery. This approach is rooted in existential positive psychology and intends to help clients with their existential struggles. Its ultimate aim is that the client develops their full potential, integrates with society, and restores their purpose and passion in life. Although MCA is based on a review of the empirical evidence and may have promising results, its efficacy must still be tested. From this dissertation, we make a call for studies providing evidence of the usefulness of this approach. The limited efficacy of current treatments for addiction suggests that the phenomenon of addiction is not well conceptualized in the present. MCA can be used as an essential complement for mainstream addiction treatments.

In Study 1, we adapted the PMP-B (McDonald et al., 2012) to the Spanish-speaking population. The PMP-B measures meaning in life through seven sources empirically supported: relationship, intimacy, achievement, self-acceptance, self-transcendence, fair treatment, and religion. To date, there was no instrument in Spanish with validated scores to assess meaning in life from a multidimensional perspective, including a standardized measure of sources of meaning. Participants in Study 1 were 546 Spanish adults composed of a community sample (n = 171) and university students (n = 375). The results of this first study showed that the Spanish version of the PMP-B has a bifactorial structure with seven subfactors (sources of meaning) and one general factor (meaning in life). We found measurement invariance between age groups, gender, and samples. Internal consistency and test-retest reliability were high. As hypothesized, older people reported higher PMP-B scores, indicating higher levels of meaning in life. Furthermore, PMP-B scores were positively associated with psychological well-being (mainly with the purpose-in-life

component) and negatively associated with psychological distress (especially with the depression component).

The sources of meaning related to achievement, relationship, intimacy, and fair treatment positively predicted psychological well-being, while achievement, fair treatment, and intimacy negatively predicted depressive symptoms. Similarly, the predictors of purpose in life were achievement, intimacy, fair treatment, and self-transcendence. These results highlight the centrality of the relational sources of meaning (based on positive, reciprocal relationships with other people and society in general) in meaning in life. Overall, the results of Study 1 provide validity evidence of the PMP-B to measure meaning in life in the Spanish adult population. The short format of this questionnaire, together with the assessment of sources of meaning, makes the PMP-B a worthy contribution to the meaning-centered research. This instrument was initially validated to be used in the rest of this dissertation's studies.

Study 2 analyzed the impact of a cancer diagnosis on personal values, exploring how meaning adaptability influenced patients' global meaning in life and quality of life. There is a visible lack of studies evaluating values change in cancer quantitatively. Moreover, the few existing studies have serious methodological limitations. In Study 2 participated 144 cancer patients registered in the Hospital of Torrecárdenas (Almería) and a healthy control group composed of 158 adults with similar demographic characteristics. To assess the change in personal values retrospectively, we created a modified version of the VLQ named the VLQ-PC. The results showed different indicators of validity evidence of this instrument. To our knowledge, the VLQ-PC is the first questionnaire in the literature with validated scores to measure perceived changes in personal values. According to this study's results, cancer patients reported a significant change in personal values since the diagnosis. Value towards areas such as family, intimate relationships, parenting, friendship, recreation, spirituality, physical care, self, and universalism increased significantly among cancer patients as compared to the control group. However, values such as work, stimulation, and power decreased in importance. Finally, a cluster analysis yielded several patient profiles based on the VLQ-PC scores. Patients who adapted their meaning in life to the cancer experience, clarifying their values significantly, presented

higher meaning in life and better quality of life's indicators than those patients who showed inflexibility in their values system.

To date, the most used theory to explain the values change because of mortality salience is the TMT (Greenberg et al., 1997; Solomon et al., 1991). This theory posits that mortality salience activates defense mechanisms such as re-affirming the worldview and personal values to counteract death anxiety. Nevertheless, our results question the TMT while they support the MMT, according to which mortality salience generates a greater life appreciation and the clarification of meaning in life. The MMT asserts that values change are explained by proactive mechanisms oriented towards personal growth rather than defense mechanisms against death anxiety. In conclusion, the findings of Study 2 may have clinical relevance in the field of psycho-oncology. Meaning-centered interventions in cancer have increased in the recent years, demonstrating improvements in areas such as spiritual well-being, quality of life, depression, and anxiety, among others (Breitbart et al., 2018, 2012, 2010; Chochinov et al., 2011; Henoch & Danielson, 2009). The impact of cancer on personal values is one of the pillars of these therapies. Our study provides evidence of the clinical importance of meaning adaptability and validity evidence of the VLQ-PC to measure values change. The VLQ-PC can be particularly useful in these interventions.

Study 3 of the present dissertation aimed to develop and implement a pilot intervention to foster meaning in life through death awareness and prosociality in close relationships. In line with Frankl (1984) and Wong (2014), self-transcendence is a principal component of meaning in life. Self-transcendence is defined as the end value for seeking and serving something greater and beyond the self, including contributing to other people. Besides its strong theoretical link, very few experimental studies have demonstrated a causal relationship between prosociality and meaning in life (Klein, 2016; Van Tongeren et al., 2016). These studies adopt a conceptualization of prosociality as the contribution to the benefit of people outside of the close social circle (e.g., contributing to a non-profit organization, giving alms, participating in a community). In addition, they do not include death awareness as a promotor of prosociality and meaning in life (see Jonas et al., 2002; Simon et al., 1998).

A total of 47 university students participated in Study 3; 25 in the experimental group and 22 in the control group. The intervention was inspired by the previous studies of this dissertation, the group meaning-centered intervention by Wong (2016), and the protocol by Aron et al. (1997), designed to generate interpersonal closeness. The intervention consisted of five sessions, including a group introduction to Frankl's and Wong's theories of meaning in life, a group guided meditation to imagine receiving a cancer diagnosis, an individual conversation about existential topics (values, relationships, life story, personal growth, death, and self-transcendence), and two sessions with group dynamics aimed to promote intimacy and prosociality. To evaluate the effects of this intervention, we used qualitative and quantitative measures. The results indicated that the intervention increased the levels of prosociality and self-transcendence, making participants more aware and active in the contribution to others' welfare. These areas, however, remained the same in the control group. VLQ-PC scores indicated a significant change in the experimental group's values, mainly in the social areas (family, friends, intimate relationships, and community). A major effect was observed in intimate relationships. Students' implication in intimate relationships increased significantly four months after the intervention. Importance and implication in the area of spirituality also increased in the experimental group. As predicted, the promotion of these areas resulted in an enhancement of participants' meaning in life, which was maintained after four months. Thus, our intervention is the first in the literature showing a causal relationship between meaning in life, death awareness, and prosociality in close relationships. The findings provide evidence of the prosocial and self-transcendental character of meaning in life (Frankl, 1984; Seligman, 2002; Wong, 2014). Meaning-centered interventions should consider this prosocial component, versus the exclusive use of self-oriented values, in order to be more effective in promoting meaning in life.

Additionally, the results showed that the intervention produced personal growth among the students and increased the value they gave to themselves, while stress levels in the post-test were lower in the experimental group than in the control. Nonetheless, these improvements were not appreciated at the follow-up four months later. In general, these results support earlier findings that report numerous personal benefits of prosociality

(Dulin & Hill, 2003; Post, 2007). Likewise, Study 3 suggests that the contribution to other people is not incompatible with the individual's well-being; they benefit mutually. In prosociality, the person voluntarily chooses to contribute to others based on their personal values. The adoption of this approach, in which the "self" and the "others" are compatible, may result particularly useful in interventions among younger generations, which are characterized by increasing individualism (Sirias et al., 2007; Twenge, 2010). The intervention described in Study 3 may serve as a model for future interventions to enhance meaning in life and prosociality in different populations.

Finally, we discuss the relationship between meaning in life and death. On the one hand, we proposed how to use meaning to cope with death. Death is typically a taboo in several western cultures. In these cultures, the self's value is ever-increasing, being the benefit of the individual the focus from which many people orient their lives. However, if the self is considered the principal source of value in life, death will be more probably experienced as the end of everything, which often generates panic. Based on Frankl's and Wong's theories, the alternative to cope with death in a more adaptive way is the practice of self-transcendence. Human beings have the potential to focus our meaning in life towards something greater than ourselves (e.g., family, friends, community, society, nature, God if one is religious). Under this perspective, death is not the end of everything, but the last step in one's life to serve a major purpose. Self-transcendence can be cultivated fundamentally from three levels: the ultimate meaning in life (based on the belief that life has intrinsic value and purpose regardless of the circumstances), situational meaning (based on the belief that each moment has potential emotional, relational, and moral significance), and life review (consisting on evaluating the contents of one's life as a whole, and considering personal growth until death). These three meaning levels can be found in any circumstance, included the end of life when it is a non-accidental conscious process.

On the other hand, we briefly reviewed how death awareness can be used to find more meaning in life. There is evidence showing that people who reject thinking about their own mortality, without a having a spiritual perspective, generally live a more superficial life, act more irresponsibly, are more disconnected from their personal values, and usually are less happy and resilient (e.g., Hoelterhoff & Chung, 2017; Holder et al.,

2010; Long, 2012; Purdy, 2004; Taubman – Ben-Ari, 2011; Wong, 2000). In this vein, many studies report that several people who go through near-death traumatic situations experience personal growth (Calhoun & Tedeschi, 2006). The present dissertation results also serve as evidence of the utility of death awareness to provide more meaning in life. For example, most cancer patients in Study 2 perceived a significant change in their personal values. Indeed, those who clarified their values system after the diagnosis benefited from higher levels of meaning in life and quality of life, particularly in terms of spiritual well-being. For that reason, death awareness was included as one of the pillars in the intervention among students. We hope that future studies consider the findings of this doctoral dissertation and make higher use of death awareness to promote meaning in life.

As a final conclusion, this dissertation provides robust evidence of the centrality of meaning in life in well-being. According to our studies' results, death awareness, prosociality, self-transcendence, and close relationships are essential sources of meaning in life. With these results, we attempt to launch a message to academia defending the relational and prosocial nature of meaning in life, versus a spread conceptualization of meaning life as a completely subjective and fundamentally self-oriented phenomenon. In line with existential positive psychology, we intend that the results are also used as a manifesto about the importance of treating aspects generally considered negative, such as death and illness, to promote more effectively and realistically meaning in life, psychological well-being, and personal flourishing. Amid the global crisis we are living because of COVID-19, the treatment of these existential aspects can be of great relevance.

Conclusiones generales

La presente tesis doctoral se enmarca teóricamente desde la psicología existencial positiva (PP2.0, Wong, 2009, 2011), un paradigma desarrollado recientemente que integra la psicología existencial humanista y la psicología positiva. Este paradigma reivindica la inclusión del sufrimiento y otros aspectos negativos de la vida (p. ej., traumas, pérdidas, enfermedad, crisis existenciales, muerte) a la hora de desarrollar una teoría del bienestar psicológico. Estos aspectos, aunque son generalmente indeseables, también pueden ser potencialmente beneficiosos. Por ejemplo, pueden servir como promotores de crecimiento personal y resiliencia. Entre los principios básicos de la psicología existencial positiva se encuentran: a) la adopción de una visión del mundo realista que incluya el lado positivo de la vida pero también la inevitabilidad de los eventos negativos, b) la importancia de aceptar, e incluso aprovechar, las emociones y pensamientos dolorosos, c) un afrontamiento dialéctico de las demandas de la vida, respondiendo de forma efectiva tanto a los eventos positivos (a través de la búsqueda y la aproximación) como a los eventos negativos (mediante una evitación adaptativa o aceptación), y d) la inherente búsqueda humana del sentido en la vida que sirve para transcender incluso las circunstancias más adversas. Desde este marco teórico, el principal objetivo de la tesis fue avanzar la investigación sobre el rol del sentido en la vida en el bienestar psicológico de tres poblaciones: personas con adicción, pacientes con cáncer y estudiantes universitarios.

En el caso de la adicción, hicimos una re-conceptualización teórica basada en la evidencia, criticando el modelo biomédico imperante que entiende la adicción como una enfermedad crónica del cerebro, y defendiendo un enfoque centrado en el sentido. El modelo biomédico presenta importantes limitaciones entre las que destacan la poca validez externa de los estudios de laboratorio (mayormente realizados con adictos crónicos y roedores), la asunción de vulnerabilidades genéticas que dificultan las medidas preventivas, y la poca eficacia de los tratamientos farmacológicos en la práctica. Sin embargo, atendiendo a una visión más pluralista de la adicción, encontramos que diferentes factores de carácter existencial aportan un mayor entendimiento sobre cómo se desarrollan y mantienen muchas de las adicciones. Numerosos estudios apuntan a los

problemas relacionales y el aislamiento social, la evasión de la culpa y la responsabilidad, así como la falta de sentido en la vida, como mecanismos subyacentes al desarrollo y mantenimiento de la adicción. La adicción puede servir tanto para aliviar a corto plazo emociones y pensamientos dolorosos, como para intentar suplir las emociones positivas que no se consiguen naturalmente en las interacciones sociales.

Bajo esta perspectiva, propusimos el enfoque centrado en el sentido (MCA por sus siglas en inglés, Wong, 2011b; Wong et al., 2013) para el tratamiento de las adicciones. Este enfoque está enraizado en la psicología existencial positiva y pretende ayudar a los clientes con sus luchas existenciales. Su último objetivo es que el cliente desarrolle su máximo potencial, se integre en la sociedad y restaure su propósito y pasión en la vida. Aunque el enfoque centrado en el sentido se sustenta en una revisión de la evidencia empírica y puede tener resultados prometedores, su eficacia todavía debe ser testada. Desde esta tesis hacemos un llamamiento a estudios que aporten evidencia sobre la utilidad de este enfoque. La limitada eficacia de los tratamientos actuales de la adicción hace pensar que el fenómeno de la adicción no está actualmente bien conceptualizado. El MCA puede servir como un importante complemento a los tratamientos actuales para la adicción.

En el Estudio 1, realizamos una adaptación del Personal Meaning Profile-Brief (PMP-B, McDonald et al., 2012) a la población hispanohablante. El PMP-B mide sentido en la vida a través de siete fuentes sustentadas empíricamente: relaciones, intimidad, logro, auto-aceptación, auto-transcendencia, trato justo y religión. En la actualidad no disponíamos de un instrumento validado en español que midiera el sentido en la vida desde una perspectiva multidimensional, incluyendo una medida estandarizada de las fuentes de sentido. La evaluación de las fuentes de sentido aporta información de relevancia clínica, permitiendo entender qué da sentido a las vidas de las personas. Los participantes del Estudio 1 fueron 546 adultos españoles entre los que se encontraba una muestra comunitaria (n = 171) y otra muestra de estudiantes universitarios (n = 375). Los resultados de este primer estudio mostraron que la versión española del PMP-B tiene una estructura bifactorial con siete subfactores (fuentes de sentido) y un factor general (sentido en la vida). Se encontró invarianza de medida entre edades, género y muestras. La consistencia interna y fiabilidad test-retest fueron altas. Según hipotetizamos, las personas mayores mostraron

puntuaciones más altas en el PMP-B, indicando un mayor sentido en la vida. Además, la puntuación del PMP-B se asoció positivamente con el bienestar psicológico (mayormente con el componente del propósito en la vida) y negativamente con el malestar psicológico (principalmente con el componente de depresión).

Las fuentes de sentido referidas al logro, relaciones, intimidad y trato justo predijeron un mayor bienestar psicológico, mientras que el logro, el trato justo y la intimidad predijeron menores síntomas depresivos. De forma similar, los predictores del propósito en la vida fueron el logro, la intimidad, el trato justo y la auto-transcendencia. Estos últimos resultados muestran la centralidad de las fuentes de carácter relacional (basadas en relaciones positivas y recíprocas con otras personas y la sociedad en general) en el sentido en la vida y el bienestar psicológico. En conjunto, los resultados del Estudio 1 aportan evidencia de la validez del PMP-B para medir sentido en la vida en la población adulta española. El formato corto de este cuestionario más su inclusión de fuentes de sentido hacen del PMP-B una valiosa herramienta para la investigación centrada en el sentido. De hecho, este instrumento se validó inicialmente para poder ser utilizado en el resto de estudios de la tesis.

El Estudio 2 analizó el impacto de un diagnóstico de cáncer en los valores personales, explorando cómo la adaptabilidad en el sistema de valores influye en el sentido en la vida y la calidad de vida de los pacientes. Existe una visible escasez de estudios que evalúen cuantitativamente el cambio de valores en cáncer, además, los pocos estudios existentes muestran serias limitaciones metodológicas. En el Estudio 2 participaron 144 pacientes con cáncer adscritos al Hospital de Torrecárdenas (Almería) y un grupo control sin enfermedad de 158 adultos con similares características demográficas. Para evaluar el cambio de valores de forma retrospectiva creamos una versión modificada del Valued Living Questionnaire (VLQ, Wilson et al., 2010), a la que denominamos como el *Valued Living Questionnaire – Perceived Change (VLQ-PC)*. Los resultados mostraron diferentes índices de validez de este instrumento, lo cual lo convierte en el primer cuestionario en la literatura (hasta donde llega nuestro conocimiento) con puntuaciones validadas para medir cambios percibidos en los valores personales. Según los resultados de este estudio, los pacientes con cáncer reportaron un cambio de valores significativo desde el diagnóstico.

El valor hacia áreas como la familia, relaciones íntimas, cuidado de los hijos, amistades, ocio, espiritualidad, cuidado físico, el yo y el universalismo incrementaron significativamente en los pacientes con cáncer en comparación con el grupo control. Sin embargo, valores como el trabajo, la estimulación y el poder disminuyeron en importancia. Finalmente, un análisis de clúster discriminó varios perfiles de pacientes en base a sus puntaciones en el VLQ-PC. Los pacientes que adaptaron su sentido en la vida a la experiencia del cáncer, clarificando significativamente sus valores, presentaron un mayor sentido en la vida y mejores índices de calidad de vida que aquellos que mostraban inflexibilidad en el sistema de valores.

Hasta la fecha, la teoría más utilizada para explicar el cambio de valores por la saliencia de la muerte ha sido la Teoría del Manejo del Terror (TMT por sus siglas en inglés, Greenberg et al., 1997; Solomon et al., 1991). Esta teoría entiende que la saliencia de la propia mortalidad activa mecanismos de defensa como la re-afirmación de la visión del mundo y los valores personales para contrarrestar la ansiedad hacia la muerte. Sin embargo, nuestros resultados cuestionan esta teoría mientras que apoyan la Teoría del Manejo del Sentido (MMT por sus siglas en inglés, Wong, 2008), según la cual, la saliencia de la muerte genera una mayor apreciación de la vida y una clarificación del sentido de ésta. La MMT defiende que el cambio en los valores se debe más a mecanismos proactivos orientados hacia el crecimiento personal que a mecanismos de defensa contra la ansiedad hacia la muerte. En conclusión, los resultados del Estudio 2 pueden tener una calada relevancia clínica en el campo de la psicooncología. Las intervenciones centradas en el sentido para el cáncer han incrementado en los últimos años, mostrando mejoras en áreas como el bienestar espiritual, calidad de vida, depresión y ansiedad, entre otros (Breitbart et al., 2018, 2012, 2010; Chochinov et al., 2011; Henoch y Danielson, 2009). El impacto del cáncer en los valores personales es uno de los pilares de estas terapias. Nuestro estudio aporta evidencia de la importancia clínica de éste fenómeno, así como de la validez del VLQ-PC para medir cambio de valores. El VLQ-PC puede resultar especialmente útil en este tipo de intervenciones.

El propósito del Estudio 3 de la presente tesis fue desarrollar e implementar una intervención piloto para promover el sentido en la vida a través de la consciencia de la

muerte y la prosocialidad en las relaciones cercanas. En línea con Frankl (1984) y Wong (2014), el sentido en la vida tiene como principal componente la auto-transcendencia, esto es, perseguir y servir a una causa mayor y más allá de uno mismo, incluyendo el beneficio de otras personas. A pesar de su fuerte vínculo teórico, muy pocos estudios experimentales han demostrado una relación causal entre la prosocialidad y el sentido en la vida (Klein, 2016; Van Tongeren et al., 2016). Estos estudios, además, adoptan una concepción de la prosocialidad como una contribución dirigida al beneficio de personas fuera del círculo social más cercano (p. ej., aportar a una ONG, dar limosna o participar en una comunidad). Dichos estudios tampoco incluyen la consciencia de la muerte como promotor de prosocialidad y sentido en la vida (ver Jonas et al., 2002; Simon et al., 1998).

En el Estudio 3 participaron un total de 47 estudiantes universitarios; 25 en el grupo experimental y 22 en el grupo control. La intervención se inspiró en los estudios previos de esta misma tesis, la intervención grupal centrada en el sentido de Wong (2016) y el protocolo de Aron et al. (1997), diseñado para generar cercanía interpersonal. La intervención consistió en cinco sesiones entre las que se incluyeron una introducción grupal a las teorías de Frankl y Wong sobre el sentido en la vida, una meditación grupal guiada en la que se imaginaba un diagnóstico de cáncer, una conversación individual sobre cuestiones existenciales (valores, relaciones, historia de vida, crecimiento personal, muerte y auto-transcendencia) y dos sesiones con dinámicas de grupo dirigidas a fomentar la intimidad y la prosocialidad. Para evaluar los resultados se utilizaron medidas tanto cuantitativas como cualitativas. Los resultados del estudio mostraron que la intervención incrementó los niveles de prosocialidad y auto-transcendencia, haciendo a los participantes más conscientes y activos en la contribución al beneficio de otros. Estas áreas, sin embargo, permanecieron iguales en el grupo control. Las puntuaciones en el VLQ-PC indicaron un cambio de valores significativo en el grupo experimental, principalmente en las áreas sociales (familia, amigos, relaciones íntimas, y comunidad). El mayor impacto se observó en las relaciones íntimas, incrementado la implicación en este área incluso a los cuatro meses tras la intervención. La implicación y el valor hacia la espiritualidad también incrementaron significativamente. Como se predijo, el fomento de estas áreas resultó en un incremento en el sentido de la vida de los participantes, el cual se mantuvo después de

cuatro meses. De este modo, nuestra intervención es la primera en la literatura que demuestra una relación causal entre el sentido en la vida, la consciencia de la muerte y la prosocialidad dirigida a las relaciones cercanas. Los resultados añaden evidencia sobre el carácter prosocial y auto-transcendental del sentido en la vida (Frankl, 1984; Seligman, 2002; Wong, 2014). Las intervenciones centradas en el sentido deberían tomar en cuenta este componente prosocial, frente al uso exclusivo de los valores orientados al yo, con el fin de ser más efectivas a la hora de promover el sentido en la vida.

Por otro lado, los resultados mostraron que la intervención produjo crecimiento personal en los estudiantes y un incremento en el valor hacia sí mismos, mientras que los niveles de estrés en el post-test fueron menores en el grupo experimental que en el grupo control. No obstante, estas mejoras no se apreciaron en el seguimiento realizado a los cuatro meses. En general, estos resultados se suman a los hallazgos previos que señalan variedad de beneficios personales por la práctica de la prosocialidad (Dulin y Hill, 2003; Post, 2007). Asimismo, nuestro estudio sugiere que la contribución al bienestar de otras personas no es incompatible con el bienestar del propio individuo, más bien lo contrario, se benefician mútuamente. En la prosocialidad, es el individuo el que elige voluntariamente aportar a otros desde sus propios valores personales. Adoptar este enfoque en el que se mantiene la compatibilidad entre el yo y el aporte a otros puede resultar particularmente útil en intervenciones que estén dirigidas a las generaciones más jóvenes, quienes se caracterizan por un creciente individualismo (Sirias et al., 2007; Twenge, 2010). La intervención aquí recogida puede servir como modelo para futuras intervenciones con el fin de fomentar en la población tanto la prosocialidad como el sentido en la vida.

Finalmente debatimos sobre la relación entre el sentido en la vida y la muerte. Por un lado, hicimos una propuesta sobre cómo utilizar el sentido para afrontar la muerte. La muerte suele ser un tabú en muchas culturas occidentales. En estas culturas cada vez se da más valor al yo, siendo el beneficio del propio individuo el eje desde el que muchas personas orientan sus vidas. Sin embargo, si el yo es considerado como el foco principal de valor en la vida, entonces la muerte más probablemente se vivirá como el final de todo, un fenómeno que suele producir un enorme pánico. Basados en las teorías de Frankl y Wong, la alternativa para afrontar la muerte de una forma más adaptativa es la práctica de

la auto-transcendencia. Los seres humanos tenemos el potencial de orientar nuestro sentido en la vida hacia algo mayor que nosotros mismos (p. ej., familia, amigos, comunidad, sociedad, naturaleza, un Dios si se es religioso). Desde esta perspectiva, la muerte no es el final de todo, sino el último paso en la vida de uno para servir a un propósito mayor. La auto-transcendencia se puede cultivar fundamentalmente desde tres niveles: el sentido último de la vida (basado la creencia que la vida tiene un valor y sentido intrínsecos a pesar de las circunstancias), el sentido situacional (basado en la creencia que cada momento tiene un potencial significado emocional, relacional y moral), y el repaso global de la vida (que consiste en evaluar los contenidos de la vida como un todo, considerando el crecimiento personal hasta la muerte). Estos tres niveles de sentido se pueden encontrar en cualquier circunstancia, incluído el final de la vida, siempre y cuando sea un proceso no accidental y consciente.

Por otro lado, hicimos una breve revisión sobre cómo la consciencia de la propia mortalidad puede servir para darle más sentido a la vida. Existe evidencia mostrando que aquellas personas que rechazan pensar sobre su propia muerte, sin tener una perspectiva espiritual, generalmente viven una vida más superficial, actúan más irresponsablemente, están más desconectados de sus valores personales y son normalmente menos felices y menos resilientes (p. ej., Hoelterhoff y Chung, 2017; Holder et al., 2010; Long, 2012; Purdy, 2004; Taubman – Ben-Ari, 2011; Wong, 2000). En esta línea, hay numerosos estudios reportando que un gran número de personas que viven situaciones traumáticas cercanas a la muerte experimentan crecimiento personal (Calhoun y Tedeschi, 2006). Este crecimiento post-traumático tiene que ver con un aumento de la fortaleza personal, una apertura a nuevas posibilidades en la vida, mejores relaciones personales, más apreciación de la vida y un cambio espiritual. Los resultados de la presente tesis también sirven como evidencia de la utilidad de la consciencia de la muerte para dar sentido a la vida. Por ejemplo, la mayoría de los pacientes con cáncer evaluados percibieron un cambio significativo en sus valores personales que tuvo que ver principalmente con ser más conscientes de la importancia de los demás y uno mismo. De hecho, aquellos que tras el diagnostico clarificaron su sistema de valores se beneficiaron de un mayor sentido en la vida y mayores índices de calidad de vida, particularmente en términos de bienestar

espiritual. Por ello, la consciencia de la muerte fue incluida como uno de los pilares básicos de la intervención en estudiantes. Esperamos que futuros estudios se apoyen en los hallazgos de esta tesis doctoral para hacer un mayor uso de la consciencia de la muerte con el fin de fomentar el sentido en la vida.

A modo de conclusión final, la tesis aporta un cuerpo amplio de evidencia sobre la centralidad del sentido en la vida en el bienestar psicológico. Según los resultados de nuestros estudios, la consciencia de la muerte, la prosocialidad y la auto-transcendencia, así como las relaciones personales, en especial las relaciones íntimas, son fuentes esenciales de sentido en la vida. Con los resultados de esta investigación pretendemos lanzar un mensaje a la academia revindicando la naturaleza relacional y prosocial del sentido en la vida, frente a una extendida concepción del sentido en la vida como algo completamente subjetivo y orientado fundamentalmente al yo. En línea con la psicología existencial positiva, pretendemos que los resultados también sirvan como manifiesto sobre la importancia de tratar aspectos considerados generalmente como negativos, tales como la muerte y la enfermedad, para promover de forma más efectiva y realista el sentido en la vida, el bienestar psicológico y la prosperidad personal. En medio de la crisis mundial que vivimos producida por la COVID-19, el tratamiento de estos aspectos existenciales puede ser de gran relevancia.

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Appendix A.
Psychological measures administered in the three studies
(in Spanish)

Personal Meaning Profile-Brief (PMP-B, version Carreno et al., 2020)

Este cuestionario está destinado a identificar lo que realmente le importa en su vida, mide la percepción de las personas sobre el sentido de sus vidas. Generalmente, una vida con sentido implica un sentimiento de propósito y significado personal. Sin embargo, la gente a menudo difiere en lo que más valora y tiene diferentes ideas sobre lo que hace la vida valiosa. Las siguientes afirmaciones describen posibles fuentes de una vida con sentido. Por favor, lea cada afirmación cuidadosamente e indique hasta qué punto cada ítem caracteriza su propia vida. Responda haciendo un círculo en el número apropiado según la siguiente escala:

1	2	3	4	5	6	7
De ningún modo			Moderadamente			Muchísimo

1.	Creo que puedo aportar algo diferente al mundo	1	2	3	4	5	6	7
2.	Tengo a alguien con quien compartir sentimientos íntimos	1	2	3	4	5	6	7
3.	Me esfuerzo por hacer de este mundo un lugar mejor.	1	2	3	4	5	6	7
4.	Busco cumplir la voluntad de Dios	1	2	3	4	5	6	7
5.	Me gusta el desafío	1	2	3	4	5	6	7
6.	Tomo la iniciativa	1	2	3	4	5	6	7
7.	Tengo un gran número de buenos amigos	1	2	3	4	5	6	7
8.	Tengo la confianza de otros	1	2	3	4	5	6	7
9.	Busco la gloria de Dios	1	2	3	4	5	6	7
10.	La vida me ha tratado justamente	1	2	3	4	5	6	7
11.	Acepto mis limitaciones	1	2	3	4	5	6	7
12.	Tengo una relación de amor mutuamente satisfactoria	1	2	3	4	5	6	7
13.	Soy querido por otros	1	2	3	4	5	6	7
14.	He encontrado a alguien al que amar profundamente	1	2	3	4	5	6	7
15.	Acepto lo que no se puede cambiar	1	2	3	4	5	6	7
16.	Soy persistente e ingenioso a la hora de conseguir mis objetivos	1	2	3	4	5	6	7
17.	Hago una contribución significativa a la sociedad	1	2	3	4	5	6	7
18.	Creo que uno puede tener una relación personal con Dios	1	2	3	4	5	6	7
19.	Soy tratado justamente por otros	1	2	3	4	5	6	7
20.	He recibido mi parte justa de oportunidades y gratificaciones	1	2	3	4	5	6	7
21.	He aprendido a vivir con el sufrimiento y hacer lo mejor de él	1	2	3	4	5	6	7

Ryff's Scales of Psychological Well-Being (SPWB, version Díaz et al., 2006)

1-Totalmente en desacuerdo / 6-Totalmente de acuerdo

	1	2	3	4	5	6
1. Cuando repaso la historia de mi vida estoy contento con cómo han resultado las cosas						
2. A menudo me siento solo porque tengo pocos amigos íntimos con quienes compartir mis preocupaciones						
3. No tengo miedo de expresar mis opiniones, incluso cuando son opuestas a las opiniones de la mayoría de la gente						
4. Me preocupa cómo otra gente evalúa las elecciones que he hecho en mi vida						
5. Me resulta difícil dirigir mi vida hacia un camino que me satisfaga						
6.Disfruto haciendo planes para el futuro y trabajar para hacerlos realidad						
7. En general, me siento seguro y positivo conmigo mismo						
8. No tengo muchas personas que quieran escucharme cuando necesito hablar						
9. Tiendo a preocuparme sobre lo que otra gente piensa de mí						
10. He sido capaz de construir un hogar y un modo de vida a mi gusto						
11. Soy una persona activa al realizar los proyectos que propuse para mí mismo						
12. Siento que mis amistades me aportan muchas cosas						
13. Tiendo a estar influenciado por la gente con fuertes convicciones						
14. En general, siento que soy responsable de la situación en la que vivo						
15. Me siento bien cuando pienso en lo que he hecho en el pasado y lo que espero hacer en el futuro						
16. Mis objetivos en la vida han sido más una fuente de satisfacción que de frustración para mí						
17. Me gusta la mayor parte de los aspectos de mi personalidad						
18. Tengo confianza en mis opiniones incluso si son contrarias al consenso general						
19. Las demandas de la vida diaria a menudo me deprimen						
20. Tengo clara la dirección y el objetivo de mi vida						
21. En general, con el tiempo siento que sigo aprendiendo más sobre mí mismo						
22. No he experimentado muchas relaciones cercanas y de confianza						
23. Es difícil para mí expresar mis propias opiniones en asuntos polémicos						
24. En su mayor parte, me siento orgulloso de quien soy y la vida que llevo						
25. Sé que puedo confiar en mis amigos, y ellos saben que pueden confiar en mí						
26. Cuando pienso en ello, realmente con los años no he mejorado mucho como persona						
27. Tengo la sensación de que con el tiempo me he desarrollado mucho como persona						
28.Para mí, la vida ha sido un proceso continuo de estudio, cambio y crecimiento						
29. Si me sintiera infeliz con mi situación de vida daría los pasos más eficaces para cambiarla						

Depression Anxiety Stress Scale (DASS-21; version Bados et al. 2005)

Por favor lea las siguientes afirmaciones y coloque un círculo alrededor de un número (0, 1, 2, 3) que indica en qué grado le ha ocurrido a usted esta afirmación *durante la semana pasada.* La escala de calificación es la siguiente*:*

0: No me ha ocurrido; 1: Me ha ocurrido un poco, o durante parte del tiempo; 2: Me ha ocurrido bastante, o durante una buena parte del tiempo; 3: Me ha ocurrido mucho, o la mayor parte del tiempo.

1.	Me ha costado mucho descargar la tensión	0	1	2	3
2.	Me di cuenta que tenía la boca seca	0	1	2	3
3.	No podía sentir ningún sentimiento positivo	0	1	2	3
4.	Se me hizo difícil respirar	0	1	2	3
5.	Se me hizo difícil tomar la iniciativa para hacer cosas	0	1	2	3
6.	Reaccioné exageradamente en ciertas situaciones	0	1	2	3
7.	Sentí que mis manos temblaban	0	1	2	3
8.	He sentido que estaba gastando una gran cantidad de energía	0	1	2	3
9.	Estaba preocupado por situaciones en las cuales podía tener pánico o en las que podría hacer el ridículo	0	1	2	3
10.	He sentido que no había nada que me ilusionara	0	1	2	3
11.	Me he sentido inquieto	0	1	2	3
12.	Se me hizo difícil relajarme	0	1	2	3
13.	Me sentí triste y deprimido	0	1	2	3
14.	No toleré nada que no me permitiera continuar con lo que estaba haciendo	0	1	2	3
15.	Sentí que estaba al punto de pánico	0	1	2	3
16.	No me pude entusiasmar por nada	0	1	2	3
17.	Sentí que valía muy poco como persona	0	1	2	3
18.	He tendido a sentirme enfadado con facilidad	0	1	2	3
19.	Sentí los latidos de mi corazón a pesar de no haber hecho ningún esfuerzo físico	0	1	2	3
20.	Tuve miedo sin razón	0	1	2	3
21.	Sentí que la vida no tenía ningún sentido	0	1	2	3

Valued Living Questionnaire – Perceived Change (VLQ-PC, modified for this dissertation)

IMPORTANCIA

A continuación se presentan varias áreas o ámbitos de la vida que son importantes para algunas personas. Marca la importancia que para ti tiene cada área en una escala de 1-10 (rodeando con un círculo). 1 significa que esa área no es nada importante para ti. 10 significa que ese ámbito de tu vida es muy importante.

Áreas	**Nada importante**									**Extremada-mente importante**
1.Familia (diferente de esposo/a o hijos/as)	1	2	3	4	5	6	7	8	9	10
2.Esposo/a, parejas, relaciones íntimas	1	2	3	4	5	6	7	8	9	10
3.Cuidado de los hijos/as	1	2	3	4	5	6	7	8	9	10
4.Amigos/vida social	1	2	3	4	5	6	7	8	9	10
5.Trabajo	1	2	3	4	5	6	7	8	9	10
6.Educación/formación	1	2	3	4	5	6	7	8	9	10
7.Ocio/diversión	1	2	3	4	5	6	7	8	9	10
8.Espiritualidad	1	2	3	4	5	6	7	8	9	10
9.Ciudadanía/vida comunitaria	1	2	3	4	5	6	7	8	9	10
10.Cuidado físico (dieta, ejercicio, descanso)	1	2	3	4	5	6	7	8	9	10
11.Yo (mí mismo/a)	1	2	3	4	5	6	7	8	9	10

Valued Living Questionnaire – Perceived Change (VLQ-PC, continuation)

IMPORTANCIA

Ahora díganos si la importancia que le da a cada área ha cambiado <u>DESDE QUE LE DIERON EL DIAGNÓSTICO DE CÁNCER</u>. Marca el cambio de importancia en una escala de 0-4. Por ejemplo, 0 significa que esa área es igual de importante para usted que antes de la enfermedad. +4 significa que ahora esa área es mucho más importante que antes. -4 significa que es mucho menos importante que antes.

Áreas	**Ahora mucho menos importante** ----				**Igual que antes**				**Ahora mucho más importante** ++++
1.Familia (diferente de esposo/a o hijos)	-4	-3	-2	-1	0	+1	+2	+3	+4
2.Esposo/a, parejas, relaciones íntimas	-4	-3	-2	-1	0	+1	+2	+3	+4
3.Cuidado de los hijos/as	-4	-3	-2	-1	0	+1	+2	+3	+4
4.Amigos/vida social	-4	-3	-2	-1	0	+1	+2	+3	+4
5.Trabajo	-4	-3	-2	-1	0	+1	+2	+3	+4
6.Educación/formación	-4	-3	-2	-1	0	+1	+2	+3	+4
7.Ocio/diversión	-4	-3	-2	-1	0	+1	+2	+3	+4
8.Espiritualidad	-4	-3	-2	-1	0	+1	+2	+3	+4
9.Ciudadanía/vida comunitaria	-4	-3	-2	-1	0	+1	+2	+3	+4
10.Cuidado físico (dieta, ejercicio, descanso)	-4	-3	-2	-1	0	+1	+2	+3	+4
11. Yo (mí mismo/a)	-4	-3	-2	-1	0	+1	+2	+3	+4

Note: To evaluate perceived changes in Study 3, instructions were modified to measure changes in importance “since the beginning of the study”.

Valued Living Questionnaire – Perceived Change (VLQ-PC, continuation)

IMPLICACIÓN PERSONAL

Ahora nos gustaría que marcaras el grado en el que te has implicado personalmente con cada uno de tus valores ***durante las últimas semanas***. 1 significa que no has dedicado nada a esa área (nada implicado). 10 significa que has dedicado muchísimo a esa área (extremadamente implicado).

Áreas	**Nada implicado**									**Extremada-mente implicado**
1.Familia (diferente de esposo/a o hijos/as)	1	2	3	4	5	6	7	8	9	10
2.Esposo/a, parejas, relaciones íntimas	1	2	3	4	5	6	7	8	9	10
3.Cuidado de los hijos/as	1	2	3	4	5	6	7	8	9	10
4.Amigos/vida social	1	2	3	4	5	6	7	8	9	10
5.Trabajo	1	2	3	4	5	6	7	8	9	10
6.Educación/formación	1	2	3	4	5	6	7	8	9	10
7.Ocio/diversión	1	2	3	4	5	6	7	8	9	10
8.Espiritualidad	1	2	3	4	5	6	7	8	9	10
9.Ciudadanía/vida comunitaria	1	2	3	4	5	6	7	8	9	10
10.Cuidado físico (dieta, ejercicio, descanso)	1	2	3	4	5	6	7	8	9	10
11.Yo (mí mismo/a)	1	2	3	4	5	6	7	8	9	10

Valued Living Questionnaire – Perceived Change (VLQ-PC, continuation)

IMPLICACIÓN PERSONAL

Señale si el nivel de implicación personal en cada área ha cambiado <u>DESDE QUE LE DIERON EL DIAGNÓSTICO DE CÁNCER</u>. Marca el cambio de implicación en una escala de 0-4. Por ejemplo, 0 significa que dedica lo mismo a esa área que antes de tener la enfermedad. +4 significa que ahora dedica mucho más que antes a esa área (mucho más implicado). -4 significa que ahora dedica mucho menos que antes (mucho menos implicado).

Áreas	**Ahora mucho menos implicado** ----				**Igual que antes**				**Ahora mucho más implicado** ++++
1.Familia (diferente de esposo/a o hijos)	-4	-3	-2	-1	0	+1	+2	+3	+4
2.Esposo/a, parejas, relaciones íntimas	-4	-3	-2	-1	0	+1	+2	+3	+4
3.Cuidado de los hijos/as	-4	-3	-2	-1	0	+1	+2	+3	+4
4.Amigos/vida social	-4	-3	-2	-1	0	+1	+2	+3	+4
5.Trabajo	-4	-3	-2	-1	0	+1	+2	+3	+4
6.Educación/formación	-4	-3	-2	-1	0	+1	+2	+3	+4
7.Ocio/diversión	-4	-3	-2	-1	0	+1	+2	+3	+4
8.Espiritualidad	-4	-3	-2	-1	0	+1	+2	+3	+4
9.Ciudadanía/vida comunitaria	-4	-3	-2	-1	0	+1	+2	+3	+4
10.Cuidado físico (dieta, ejercicio, descanso)	-4	-3	-2	-1	0	+1	+2	+3	+4
11. Yo (mí mismo/a)	-4	-3	-2	-1	0	+1	+2	+3	+4

Note: To evaluate perceived changes in Study 3, instructions were modified to measure changes in personal implication “since the beginning of the study”.

Portrait Values Questionnaire (PVQ, female version, Solano & Nader, 2006)

A continuación describimos brevemente a algunas personas. Por favor lea cada descripción y piense en qué medida se parece o no se parece a usted cada una de esas personas. Ponga una "X" en la casilla de la derecha que muestre cuanto se parece a usted la persona descrita.

¿QUÉ TANTO SE PARECE ESTA PERSONA A USTED?

	No se parece nada a mí (1)	No se parece a mí (2)	Se parece un poco a mí (3)	Se parece algo a mí (4)	Se parece a mí (5)	Se parece mucho a mí (6)
1.Tener ideas nuevas y ser creativo es importante para ella. Le gusta hacer las cosas de manera propia y original.	☐	☐	☐	☐	☐	☐
2. Para ella es importante ser rico. Quiere tener mucho dinero y cosas caras.	☐	☐	☐	☐	☐	☐
3. Piensa que es importante que a todos los individuos del mundo se les trate con igualdad. Cree que todos deberían tener las mismas oportunidades en la vida.	☐	☐	☐	☐	☐	☐
4. Para ella es muy importante mostrar sus habilidades. Quiere que la gente la admire por lo que hace.	☐	☐	☐	☐	☐	☐
5. Le importa vivir en lugares seguros. Evita cualquier cosa que pudiera poner en peligro su seguridad.	☐	☐	☐	☐	☐	☐
6. Ella piensa que es importante hacer muchas cosas diferentes en la vida. Siempre busca experimentar cosas nuevas.	☐	☐	☐	☐	☐	☐
7. Cree que las personas deben hacer lo que se les dice. Opina que la gente debe seguir las reglas todo el tiempo, aún cuando nadie le observa.	☐	☐	☐	☐	☐	☐
8. Le parece importante escuchar a las personas que son distintas a ella. Incluso cuando está en desacuerdo con ellas, todavía desea entenderlas.	☐	☐	☐	☐	☐	☐
9. Ella piensa que es importante no pedir más de lo que se tiene. Cree que las personas deben estar satisfechas con lo que tienen.	☐	☐	☐	☐	☐	☐
10. Busca cualquier oportunidad para divertirse. Para ella es importante realizar actividades que le resulten placenteras.	☐	☐	☐	☐	☐	☐
11. Es importante para ella tomar sus propias decisiones acerca de lo que hace. Le gusta tener la libertad de planear y elegir por sí misma sus actividades.	☐	☐	☐	☐	☐	☐
12. Es muy importante para ella ayudar a la gente que le rodea. Se preocupa por su bienestar.	☐	☐	☐	☐	☐	☐
13. Para ella es importante ser una persona muy exitosa. Le gusta impresionar a la gente.	☐	☐	☐	☐	☐	☐
14. Es muy importante para ella la seguridad de su país. Piensa que el estado debe mantenerse alerta ante las amenazas internas y externas.	☐	☐	☐	☐	☐	☐
15. Le gusta arriesgarse. Anda siempre en busca de aventuras.	☐	☐	☐	☐	☐	☐
16. Es importante para ella comportarse siempre correctamente. Procura evitar hacer cualquier cosa que la gente juzgue incorrecta.	☐	☐	☐	☐	☐	☐
17. Para ella es importante mandar y decir a los demás lo que tienen que hacer. Desea que las personas hagan lo que les dice.	☐	☐	☐	☐	☐	☐
18. Es importante para ella ser leal a sus amigos. Se entrega totalmente a las personas cercanas a ella	☐	☐	☐	☐	☐	☐

Portrait Values Questionnaire (PVQ, female version, Solano & Nader, 2006, continuation)

	¿QUÉ TANTO SE PARECE ESTA PERSONA A USTED?					
	No se parece nada a mí (1)	No se parece a mí (2)	Se parece un poco a mí (3)	Se parece algo a mí (4)	Se parece a mí (5)	Se parece mucho a mí (6)
19. Cree firmemente que las personas deben proteger la naturaleza. Le es importante cuidar el medio ambiente.	☐	☐	☐	☐	☐	☐
20. Las creencias religiosas son importantes para ella. Trata firmemente de hacer lo que su religión le manda.	☐	☐	☐	☐	☐	☐
21. Le importa que las cosas estén en orden y limpias. De plano no le gusta que las cosas estén hechas un lío.	☐	☐	☐	☐	☐	☐
22. Cree que es importante interesarse en las cosas. Le gusta ser curiosa y trata de entender toda clase de cosas.	☐	☐	☐	☐	☐	☐
23. Cree que todos los habitantes de la Tierra deberían vivir en armonía. Para ella es importante promover la paz entre todos los grupos del mundo.	☐	☐	☐	☐	☐	☐
24. Piensa que es importante ser ambiciosa. Desea mostrar lo capaz que es.	☐	☐	☐	☐	☐	☐
25. Cree que es mejor hacer las cosas en forma tradicional. Es importante para ella conservar las costumbres que ha aprendido.	☐	☐	☐	☐	☐	☐
26. Disfrutar de los placeres de la vida es importante para ella. Le agrada "consentirse" a sí misma.	☐	☐	☐	☐	☐	☐
27. Es importante para ella responder a las necesidades de los demás. Trata de apoyar a quienes conoce.	☐	☐	☐	☐	☐	☐
28. Cree que debe respetar siempre a sus padres y a las personas mayores. Para ella es importante ser obediente.	☐	☐	☐	☐	☐	☐
29. Desea que todos sean tratados con justicia, incluso las personas a las que no conoce. Le es importante proteger a los más débiles.	☐	☐	☐	☐	☐	☐
30. Le gustan las sorpresas. Tener una vida llena de emociones es importante para ella.	☐	☐	☐	☐	☐	☐
31. Tiene mucho cuidado de no ponerse enferma. Para ella es muy importante mantenerse sana.	☐	☐	☐	☐	☐	☐
32. Progresar en la vida es importante para ella. Se esfuerza en ser mejor que otros.	☐	☐	☐	☐	☐	☐
33. Para ella es importante perdonar a la gente que le ha hecho daño. Trata de ver lo bueno en ellos y no guardarles rencor.	☐	☐	☐	☐	☐	☐
34. Es importante para ella ser independiente. Le gusta arreglárselas sola.	☐	☐	☐	☐	☐	☐
35. Es importante para ella que haya un gobierno estable. Le preocupa que se mantenga el orden social.	☐	☐	☐	☐	☐	☐
36. Le es importante ser siempre amable con todo el mundo. Trata de no molestar nunca o irritar a los demás.	☐	☐	☐	☐	☐	☐
37. Ella realmente desea disfrutar de la vida. Pasárselas bien es muy importante para ella.	☐	☐	☐	☐	☐	☐
38. Para ella es importante ser humilde y modesta. Trata de no llamar la atención.	☐	☐	☐	☐	☐	☐
39. Siempre quiere ser la que toma las decisiones. Le gusta ser la líder.	☐	☐	☐	☐	☐	☐
40. Es importante para ella adaptarse a la naturaleza y ajustarse a ésta. Cree que la gente no debería cambiar la naturaleza.	☐	☐	☐	☐	☐	☐

Portrait Values Questionnaire (PVQ, version "before cancer", modified for this dissertation)

A continuación describimos brevemente a algunas personas. Por favor lea cada descripción y piense en qué medida se parecía cada una de esas personas a usted ***antes de recibir el diagnóstico de la enfermedad.***

¿QUE TANTO SE PARECIA ESTA PERSONA A USTED?

	No se parecía nada a mí (1)	No se parecía a mí (2)	Se parecía un poco a mí (3)	Se parecía algo a mí (4)	Se parecía a mí (5)	Se parecía mucho a mí (6)
1. Tener ideas nuevas y ser creativo era importante para ella. Le gustaba hacer las cosas de manera propia y original.	☐	☐	☐	☐	☐	☐
2. Para ella era importante ser rica. Quería tener mucho dinero y cosas caras.	☐	☐	☐	☐	☐	☐
3. Pensaba que era importante que a todos los individuos del mundo se les tratase con igualdad. Creía que todos deberían tener las mismas oportunidades en la vida.	☐	☐	☐	☐	☐	☐
4. Para ella era muy importante mostrar sus habilidades. Quería que la gente la admirara por lo que hacía.	☐	☐	☐	☐	☐	☐
5. Le importaba vivir en lugares seguros. Evitaba cualquier cosa que pudiera poner en peligro su seguridad.	☐	☐	☐	☐	☐	☐
6. Ella pensaba que era importante hacer muchas cosas diferentes en la vida. Siempre buscaba experimentar cosas nuevas.	☐	☐	☐	☐	☐	☐
7. Creía que las personas debían hacer lo que se les decía. Opinaba que la gente debía seguir las reglas todo el tiempo, aun cuando nadie le observaba.	☐	☐	☐	☐	☐	☐
8. Le parecía importante escuchar a las personas que eran distintas a ella. Incluso cuando estaba en desacuerdo con ellas, todavía deseaba entenderlas.	☐	☐	☐	☐	☐	☐
9. Ella pensaba que era importante no pedir más de lo que se tenía. Creía que las personas debían estar satisfechas con lo que tenían.	☐	☐	☐	☐	☐	☐
10. Buscaba cualquier oportunidad para divertirse. Para ella era importante realizar actividades que le resultasen placenteras.	☐	☐	☐	☐	☐	☐
11. Era importante para ella tomar sus propias decisiones acerca de lo que hacía. Le gustaba tener la libertad de planear y elegir por sí misma sus actividades.	☐	☐	☐	☐	☐	☐
12. Era muy importante para ella ayudar a la gente que le rodeaba. Se preocupaba por su bienestar.	☐	☐	☐	☐	☐	☐
13. Para ella era importante ser una persona muy exitosa. Le gustaba impresionar a la gente.	☐	☐	☐	☐	☐	☐
14. Era muy importante para ella la seguridad de su país. Pensaba que el estado debía mantenerse alerta ante las amenazas internas y externas.	☐	☐	☐	☐	☐	☐
15. Le gustaba arriesgarse. Andaba siempre en busca de aventuras.	☐	☐	☐	☐	☐	☐
16. Era importante para ella comportarse siempre correctamente. Procuraba evitar hacer cualquier cosa que la gente juzgara incorrecta.	☐	☐	☐	☐	☐	☐
17. Para ella era importante mandar y decir a los demás lo que tenían que hacer. Deseaba que las personas hicieran lo que les decía.	☐	☐	☐	☐	☐	☐
18. Era importante para ella ser leal a sus amigos. Se entregaba totalmente a las personas cercanas a ella.	☐	☐	☐	☐	☐	☐
19. Creía firmemente que las personas debían proteger la naturaleza. Le era importante cuidar el medio ambiente.	☐	☐	☐	☐	☐	☐

Portrait Values Questionnaire (PVQ, version "before cancer", continuation)

	¿QUE TANTO SE PARECIA ESTA PERSONA A USTED?					
	No se parecia nada a mi (1)	No se parecia a mi (2)	Se parecia un poco a mi (3)	Se parecia algo a mi (4)	Se parecia a mi (5)	Se parecia mucho a mi (6)
20. Las creencias religiosas eran importantes para ella. Trataba firmemente de hacer lo que su religión le mandaba.	☐	☐	☐	☐	☐	☐
21. Le importaba que las cosas estuvieran en orden y limpias. De plano no le gustaba que las cosas estuvieran hechas un lío.	☐	☐	☐	☐	☐	☐
22. Creía que era importante interesarse en las cosas. Le gustaba ser curiosa y trataba de entender toda clase de cosas.	☐	☐	☐	☐	☐	☐
23. Creía que todos los habitantes de la Tierra debían vivir en armonía. Para ella era importante promover la paz entre todos los grupos del mundo.	☐	☐	☐	☐	☐	☐
24. Pensaba que era importante ser ambicioso. Deseaba mostrar lo capaz que era.	☐	☐	☐	☐	☐	☐
25. Creía que era mejor hacer las cosas en forma tradicional. Era importante para ella conservar las costumbres que había aprendido.	☐	☐	☐	☐	☐	☐
26. Disfrutar de los placeres de la vida era importante para ella. Le agradaba "consentirse" a sí misma.	☐	☐	☐	☐	☐	☐
27. Era importante para ella responder a las necesidades de los demás. Trataba de apoyar a quienes conocía.	☐	☐	☐	☐	☐	☐
28. Creía que debía respetar siempre a sus padres y a las personas mayores. Para ella era importante ser obediente.	☐	☐	☐	☐	☐	☐
29. Deseaba que todos fuesen tratados con justicia, incluso las personas a las que no conocía. Le era importante proteger a los más débiles.	☐	☐	☐	☐	☐	☐
30. Le gustaban las sorpresas. Tener una vida llena de emociones era importante para ella.	☐	☐	☐	☐	☐	☐
31. Tenía mucho cuidado de no ponerse enferma. Para ella era muy importante mantenerse sana.	☐	☐	☐	☐	☐	☐
32. Progresar en la vida era importante para ella. Se esforzaba en ser mejor que otros.	☐	☐	☐	☐	☐	☐
33. Para ella era importante perdonar a la gente que le había hecho daño. Trataba de ver lo bueno en ellos y no guardarles rencor.	☐	☐	☐	☐	☐	☐
34. Era importante para ella ser independiente. Le gustaba arreglárselas sola.	☐	☐	☐	☐	☐	☐
35. Era importante para ella que hubiera un gobierno estable. Le preocupaba que se mantuviera el orden social.	☐	☐	☐	☐	☐	☐
36. Le era importante ser siempre amable con todo el mundo. Trataba de no molestar nunca o irritar a los demás.	☐	☐	☐	☐	☐	☐
37. Ella realmente deseaba disfrutar de la vida. Pasárselas bien era muy importante para ella.	☐	☐	☐	☐	☐	☐
38. Para ella era importante ser humilde y modesta. Trataba de no llamar la atención.	☐	☐	☐	☐	☐	☐
39. Siempre quería ser la que tomara las decisiones. Le gustaba ser la líder.	☐	☐	☐	☐	☐	☐
40. Era importante para ella adaptarse a la naturaleza y ajustarse a ésta. Creía que la gente no debía cambiar la naturaleza.	☐	☐	☐	☐	☐	☐

Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being (FACIT-Sp, versions Dapueto et al., 2003, and Peterman et al., 2002)

A continuación encontrará una lista de afirmaciones que otras personas con su misma enfermedad consideran importantes. **Marque un solo número por línea para indicar la respuesta que corresponde a los últimos 7 días.**

	ESTADO FÍSICO GENERAL DE SALUD	**Nada**	**Un poco**	**Algo**	**Mucho**	**Muchí-simo**
GP1	Me falta energía	0	1	2	3	4
GP2	Tengo náuseas	0	1	2	3	4
GP3	Debido a mi estado físico, tengo dificultad para atender a las necesidades de mi familia.	0	1	2	3	4
GP4	Tengo dolor	0	1	2	3	4
GP5	Me molestan los efectos secundarios del tratamiento	0	1	2	3	4
GP6	Me siento enfermo(a)	0	1	2	3	4
GP7	Tengo que pasar tiempo acostado(a)	0	1	2	3	4

	AMBIENTE FAMILIAR Y SOCIAL	**Nada**	**Un poco**	**Algo**	**Mucho**	**Muchí-simo**
GS1	Me siento cercano(a) a mis amistades	0	1	2	3	4
GS2	Recibo apoyo emocional por parte de mi familia	0	1	2	3	4
GS3	Recibo apoyo por parte de mis amistades	0	1	2	3	4
GS4	Mi familia ha aceptado mi enfermedad	0	1	2	3	4
GS5	Estoy satisfecho(a) con la manera en que se comunica mi familia acerca de mi enfermedad	0	1	2	3	4
GS6	Me siento cercano(a) a mi pareja (o a la persona que es mi principal fuente de apoyo)	0	1	2	3	4
Q1	*Sin importar su nivel actual de actividad sexual, conteste a la siguiente pregunta. Si prefiere no contestarla, marque esta casilla* ☐ *y continúe con la siguiente sección.*					
GS7	Estoy satisfecho(a) con mi vida sexual	0	1	2	3	4

Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being (FACIT-Sp, versions Dapueto et al., 2003, and Peterman et al., 2002, continuation)

Marque un solo número por línea para indicar la respuesta que corresponde a los últimos 7 días.

	ESTADO EMOCIONAL	**Nada**	**Un poco**	**Algo**	**Mucho**	**Muchí-simo**
GE1	Me siento triste	0	1	2	3	4
GE2	Estoy satisfecho(a) de cómo me estoy enfrentando a mi enfermedad	0	1	2	3	4
GE3	Estoy perdiendo las esperanzas en la lucha contra mi enfermedad	0	1	2	3	4
GE4	Me siento nervioso(a)	0	1	2	3	4
GE5	Me preocupa morir	0	1	2	3	4
GE6	Me preocupa que mi enfermedad empeore	0	1	2	3	4

	CAPACIDAD DE FUNCIONAMIENTO PERSONAL	**Nada**	**Un poco**	**Algo**	**Mucho**	**Muchí-simo**
GF1	Puedo trabajar (incluya el trabajo en el hogar)	0	1	2	3	4
GF2	Mi trabajo me satisface (incluya el trabajo en el hogar)	0	1	2	3	4
GF3	Puedo disfrutar de la vida	0	1	2	3	4
GF4	He aceptado mi enfermedad	0	1	2	3	4
GF5	Duermo bien	0	1	2	3	4
GF6	Disfruto con mis pasatiempos de siempre	0	1	2	3	4
GF7	Estoy satisfecho(a) con mi calidad de vida actual	0	1	2	3	4

Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being (FACIT-Sp, versions Dapueto et al., 2003, and Peterman et al., 2002, continuation)

SPIRITUAL WELL-BEING SCALE

Marque un solo número por línea para indicar la respuesta que corresponde a los últimos 7 días.

	OTRAS PREOCUPACIONES	**Nada**	**Un poco**	**Algo**	**Mucho**	**Muchí-simo**
Sp1	Me siento en paz	0	1	2	3	4
Sp2	Tengo una razón para vivir	0	1	2	3	4
Sp3	Mi vida ha sido productiva	0	1	2	3	4
Sp4	Tengo dificultades para conseguir paz mental	0	1	2	3	4
Sp5	Siento que mi vida tiene sentido	0	1	2	3	4
Sp6	Soy capaz de encontrar consuelo dentro de mí mismo(a)	0	1	2	3	4
Sp7	Tengo un sentimiento de armonía interior	0	1	2	3	4
Sp8	A mi vida le falta sentido y propósito	0	1	2	3	4
Sp9	Encuentro consuelo en mi fe o mis creencias espirituales	0	1	2	3	4
Sp10	Encuentro fuerza en mi fe o mis creencias espirituales	0	1	2	3	4
Sp11	Mi enfermedad ha fortalecido mi fe o mis creencias espirituales	0	1	2	3	4
Sp12	Pase lo que pase con mi enfermedad, todo va a ir bien	0	1	2	3	4

Mindfulness Attention Awareness Scale (MAAS, version Soler et al., 2012)

A continuación aparecen una serie de afirmaciones sobre su día a día. En una escala de 1-6 indique cómo de frecuente o infrecuentemente le pasa actualmente cada experiencia. Responda de acuerdo a su experiencia real y no a cómo debería ser.

1	2	3	4	5	6
Casi siempre	Muy frecuentemente	Algo frecuente	Algo infrecuente	Muy infrecuente	Casi nunca

1. Podría sentir una emoción y no ser consciente de ella hasta más tarde.	1	2	3	4	5	6
2. Rompo o derramo cosas por descuido, por no poner atención, o por estar pensando en otra cosa.	1	2	3	4	5	6
3. Encuentro difícil estar centrado en lo que está pasando en el presente.	1	2	3	4	5	6
4. Tiendo a caminar rápido para llegar a donde voy sin prestar atención a lo que experimento durante el camino.	1	2	3	4	5	6
5. Tiendo a no darme cuenta de sensaciones de tensión física o incomodidad hasta que realmente captan mi atención.	1	2	3	4	5	6
6. Me olvido del nombre de una persona tan pronto me lo dicen por primera vez.	1	2	3	4	5	6
7. Parece como si "funcionara en automático" sin demasiada consciencia de lo que estoy haciendo.	1	2	3	4	5	6
8. Hago las actividades con prisas, sin estar realmente atento a ellas.	1	2	3	4	5	6
9. Me concentro tanto en la meta que deseo alcanzar que pierdo contacto con lo que estoy haciendo ahora para alcanzarla.	1	2	3	4	5	6
10. Hago trabajos o tareas automáticamente, sin darme cuenta de lo que estoy haciendo.	1	2	3	4	5	6
11. Me encuentro a mí mismo escuchando a alguien por una oreja y haciendo otra cosa al mismo tiempo.	1	2	3	4	5	6
12. Conduzco en "piloto automático" y luego me pregunto por qué fui allí.	1	2	3	4	5	6
13. Me encuentro absorto acerca del futuro o el pasado.	1	2	3	4	5	6
14. Me descubro haciendo cosas sin prestar atención.	1	2	3	4	5	6
15. Pico sin ser consciente de que estoy comiendo.	1	2	3	4	5	6

Attitudes towards Helping Others scale (AHO, version Montilla Jiménez et al., 2009)

Las siguientes afirmaciones tratan acerca de sus pensamientos y sentimientos en varias situaciones. Señale para cada ítem en qué grado le describe eligiendo un número de una escala del 1 al 5.

1	2	3	4	5
Nada de acuerdo	Algo de acuerdo	Bastante de acuerdo	Muy de acuerdo	Totalmente de acuerdo

	1	2	3	4	5
Las personas deben estar dispuestas a ayudar a otros más desafortunados.					
La gente necesita aprender a cuidarse por ellos mismos y no depender de los demás.					
Personalmente, es muy importante para mí ayudar a los demás en sus problemas.					
En estos tiempos, la gente necesita cuidarse a sí misma y no estar excesivamente preocupada por los demás.					

Empathetic Concern scale (EC, Interpersonal Reactivity Index, version Pérez-Albéniz et al., 2003)

Las siguientes afirmaciones tratan acerca de sus pensamientos y sentimientos en varias situaciones. Señale para cada ítem en qué grado le describe eligiendo un número de una escala del 1 al 5.

1	2	3	4	5
Nada de acuerdo	Algo de acuerdo	Bastante de acuerdo	Muy de acuerdo	Totalmente de acuerdo

	1	2	3	4	5
A menudo tengo sentimientos de compasión y preocupación hacia gente menos afortunada que yo.					
A veces no me dan mucha lástima otras personas cuando tienen problemas.					
Cuando veo que se aprovechan de alguien, siento necesidad de protegerle.					
Cuando veo que alguien se hace daño, tiendo a permanecer tranquilo.					
Las desgracias de otros no suelen angustiarme mucho					
Cuando veo que alguien está siendo tratado injustamente, no suelo sentir mucha pena por él.					
A menudo me conmueven las cosas que veo que pasan.					
Me describiría como una persona bastante sensible.					

Process variables measured in Study 3 (1- global meaning in life, 2- self-worth, 3- others-focus, 4- self-focus, and 5- axis self-focus vs other-focus)

1.- De 1-100, ¿cuánto sentido ha tenido tu vida hasta ahora?:_____

2.- De 1-100, ¿cómo te valoras como persona?:_____

3.- Señala cómo estás de centrado en aportar algo a los demás en el PRESENTE:

0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Nada en absoluto completamente

4.- Señala cómo estás de centrado en ti mismo en el PRESENTE:

0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Nada en absoluto completamente

5.- Indica en qué lugar te encuentras en este eje "Centrado en mí/ Centrado en aportar a los demás" en el PRESENTE:

50	45	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	45	50

YO DEMÁS

Appendix B.
Informed consent forms
(in Spanish)

Informed consent form for Study 1 and Study 2

CONSENTIMIENTO INFORMADO

Titulo del estudio:

Valores personales y calidad de vida en enfermedad crónica

Yo, (nombre y apellidos).....

He leído la hoja de información que se me ha entregado.
He podido hacer preguntas sobre el estudio.
He recibido suficiente información sobre el estudio.

He hablado con: (nombre y apellidos): □ *David Fernández Carreño* □ Otro: .....

.....
Comprendo que mi participación es voluntaria.

Comprendo que puedo retirarme del estudio:

1. Cuando quiera
2. Sin tener que dar explicaciones.
3. Sin que ello repercuta en mis cuidados médicos.

Presto libremente mi conformidad para participar en el estudio.

Fecha.....

Firma del Participante:

D.N.I:

Nombre y apellidos:

Firma del Investigador:

DNI: *48633916W*

Nombre y apellidos:
David Fernández Carreño

Informed consent form for Study 3

PROTOCOLO DE CONSENTIMIENTO INFORMADO

D./Dña. …*David Fernández Carreño*……, Investigador/a Principal del Proyecto denominado *El sentido en la vida y bienestar psicológico en estudiantes universitarios* **ha informado** a través de la documentación que se adjunta (Anexo) a:

D./Dña …… D.N.I. ……,

sobre *el procedimiento general del presente estudio, los objetivos, duración, finalidad, criterios de inclusión y exclusión, posibles riesgos y beneficios del mismo, así como sobre la posibilidad de abandonarlo sin tener que alegar motivos** y en conocimiento de todo ello y de las medidas que se adoptarán para la *protección de los datos personales* de los / las participantes según la normativa vigente,

OTORGA su consentimiento para la participación en actual investigación [titulada …… (indicar sólo si el nombre del estudio concreto es diferente al del Proyecto)].

Fdo: Dn./Dña. …… D.N.I. ……..

Fdo. Dn. / Dña. …David Fernández Carreño….. D.N.I. 48633916W…….
Investigador/a Principal del Proyecto.

En ……, a . . . . . de . . . . . .de 2……

Appendix C.

Content of the exercises included in the intervention, Study 3 (in Spanish and English)

Imagined cancer diagnosis exercise (20m). Group guided meditation to promote death awareness during the intervention (Spanish)

Para empezar, buscad una posición cómoda, preferiblemente con las piernas separadas y la espalda relajada. Y en el momento que deseéis, podéis cerrar los ojos…….. De aquí en adelante, con vuestro permiso, os voy a hablar de tú individualmente…….Puede que sientas curiosidad por lo que está por pasar; quizás sea risa lo que te surja en este momento, o quizás desconfianza o incertidumbre. Sea lo que sea, quiero que lo observes, que lo dejes estar, mientras te centras en mi voz.

Son muchas las cosas que en este momento hay a tu alrededor. Puedes sentir la presencia del resto de tus compañeros, los sonidos del ambiente, la temperatura de la sala, la silla sobre la que estás sentado, la fuerza que ejerce la gravedad sobre tu cuerpo……Al mismo tiempo respiras profundamente, tomando aire por la nariz, llenando tus pulmones……, y soltando el aire más lentamente de cómo lo coges….. Observa cómo entra…..y cómo sale…..Y en ese vaivén de aire puede que empiece a aparecer un ligero estado de relax, de paz, como si tu cuerpo pareciera ir encontrando su posición natural. Presta atención a tus piernas….. a medida que sueltas el aire, comienzan a soltarse, a dejarse caer completamente hacia el suelo…. Inconscientemente sueles tensar tus músculos. En este momento toma consciencia de esta tensión y empieza a relajar el tronco….., la espalda…., barriga….. y tu pecho….. Deja que la carga se vaya junto al aire que expulsas por tu nariz. Tómate tu tiempo para hacer lo mismo con tus brazos…… tu cuello…..y tu cabeza…..

Ahora que tu cuerpo está más pesado y relajado, es más fácil observar todo lo que hay en tu mente…. Observa los diferentes pensamientos que aparecen…, proyéctalos en frente de ti como si de una pantalla de cine se tratara…… míralos, escúchalos, observa cómo te hace sentir cada uno de ellos……Ahora que tienes esta pantalla delante de ti, vamos a hacer un pequeño viaje….. Quiero que proyectes en esa pantalla tu centro de salud u hospital al que sueles ir…. Míralo en frente de ti…. A la de tres vamos a entrar en esa pantalla, vamos a ser los protagonistas…..¡Tres!……comienzas a ver con más claridad los colores que hay en este hospital…….¡Dos!…….sigues acercándote a la escena……¡Uno!…….comienzas a sentir y escuchar todo lo que hay dentro……..¡Estás!

Te encuentras en la sala de espera para entrar en consulta. Te has hecho hace unas semanas un análisis de sangre como control de salud. Nada importante, te encuentras bien. Mira las personas que están en la cola, impacientes por entrar…….Es tu turno, te diriges a la puerta, la empujas y ves a tu médico sentado saludándote normalmente, “el análisis de sangre, ¿verdad?”. El doctor busca en el ordenador tus resultados mientras tú te sientes tranquilo pero

Note: The number of dots represents the length of the silence between sentences.

Imagined cancer diagnosis exercise (20m). Group guided meditation to promote death awareness during the intervention (Spanish, continuation)

con cierta incertidumbre. Tu médico empieza a ponerse serio y revisa lo que está leyendo…."¿Qué pasa?"….. Te está explicando que han salido anomalías en los resultados y que tienes que hacerte unas pruebas a la mayor brevedad posible en el hospital central, en el área de oncología…."¿cómo? ¡no puede ser! estoy bien"..... el doctor intenta tranquilizarte pero su mirada tiene cierta incertidumbre…… Sales de la consulta asustado e incrédulo sobre la noticia.

Pasan varios días difíciles para ti hasta la cita en el área de oncología. Una vez allí te hacen una biopsia, te están extrayendo una parte de tu cuerpo para analizarla…… Te vuelven a citar una semana más tarde para que el especialista te dé los resultados…..

Llega el momento…, te encuentras sentado delante del oncólogo…. En la habitación hay un fuerte olor…. Notas en tu cuerpo que es el momento de la verdad…. El doctor te dice que desafortunadamente han encontrado un tumor maligno……..Te ha tocado……el doctor te explica con palabras técnicas la situación…….. pero sólo te quedas con dos cosas: el pronóstico es incierto y te espera un largo y doloroso tratamiento…….

Apenas prestas atención al camino de vuelta a casa, pero ya te encuentras en la puerta, esperando dar la noticia a tus seres queridos… Entras, y allí están, mirándote con miedo en sus ojos…… Con todo lo difícil que te resulta, te tomas tu tiempo para decírselo y ver su reacción……

Y ahora que todas las personas que te importan ya lo saben, te diriges a tu habitación y te tumbas en la cama solo……. El mundo sigue igual que siempre pero ya nada es lo mismo…….Tumbado, te pueden empezar a venir diferentes emociones. "No puede ser verdad"……., "Pero si ahora me encuentro bien físicamente"……, "¿Por qué yo, tan joven?"……, "¿qué he hecho yo para merecer esto?"…...

Coges el móvil y comienzas a buscar en internet desesperadamente el pronóstico y la solución. Nada, no se sabe cuál es la solución…… solo encuentras casos con tu enfermedad que fallecen en pocos meses y otros que se curan milagrosamente……Leyendo estos casos te pueden venir varias sensaciones……. "Puede que esto acabe mal, que sea el fin de todo….. Que mis planes y sueños ya no se puedan alcanzar….. Aquello que más quiero se esfume para siempre….. Que tenga que llevar ese sufrimiento, sin que nadie pueda quitármelo, ni siquiera acompañarme por completo."……

Imagined cancer diagnosis exercise (20m). Group guided meditation to promote death awareness during the intervention (Spanish, continuation)

Puede que lo que pase por tu cabeza es el tiempo que te queda, asumiendo la realidad….. Pregúntate qué es lo más importante para ti en la vida, en qué quieres invertir tu tiempo de aquí en adelante……sin saber cuánto te queda…..Tómate tu tiempo……

Quizás este viaje, imaginándote con un diagnóstico de cáncer, no te resulte fácil. Por ello te agradezco tu valentía….. Realmente nunca sabemos cuánto nos queda. Vivimos en la inercia, pensando que somos eternos, que siempre hay más tiempo……. ¿te haces estas preguntas básicas con frecuencia?...., si no es así, ¿qué te impide hacerlo?.....¿en tu día a día, estás haciendo lo que realmente te importa?..... Siendo sincero contigo mismo, ¿te gustaría empezar a hacer algo distinto a partir de este momento?.....¿qué sería eso exactamente?.....

Si ya sabes las respuestas a estas preguntas, guárdalas en un lugar seguro dentro de ti…… Se pueden quedar grabadas en la pantalla que ha creado tu mente……. para que, al igual que has hecho hoy, puedas acceder a ellas en el momento que desees…..

Y ahora….., comienza a dejar atrás este espacio que has creado con tu imaginación…, vuelve a sentirte aquí….., en esta habitación…… Vuelve la atención a tu cuerpo sentado en la silla…… Si lo deseas puedes comenzar a mover tus pies……, tus manos……, tu boca……., respirar a tu ritmo……. Deja que vuelvan tus sensaciones y pensamientos cotidianos……., y poco a poco, recordando el viaje que has experimentado hoy, puedes ir abriendo los ojos.

Imagined cancer diagnosis exercise (20m). Group guided meditation to promote death awareness during the intervention (English)

To begin, find a comfortable position, preferably with your legs separate and your back relaxed. And at the moment you want, you can close your eyes …….. From now on, with your permission, I am going to talk to you individually …….You may be curious about what is about to happen, maybe it is laughter that arises at this moment, or perhaps mistrust, or uncertainty. Whatever it is, I want you to watch it, let it be, while you focus on my voice.

There are many things around you at this moment. You can feel the presence of the rest of your classmates, the sounds of the environment, the temperature of the room, the chair on which you are sitting, the force that gravity exerts on your body ..... At the same time, you breathe deeply, taking air through the nose, filling your lungs ……, and releasing the air more slowly than how you take it….. See how it enters…..and how it leaves……And, in that swaying of air, a slight state of relaxation may begin to appear, of peace, as if your body seemed to be finding its natural position. Pay attention to your legs….. as you breath out, they begin to loosen, dropping completely towards the ground…. Unconsciously you tend to tense your muscles. At this moment, become aware of this tension and begin to relax you trunk….., your back…., your belly….. and your chest….. Let the load go along with the air that you expel through your nose. Take your time to do the same with your arms …… your neck….. and your head…..

Now that your body is heavier and more relaxed, it is easier to observe everything in your mind…. Observe the different thoughts that show up…, project them in front of you as if it was a movie screen …… look at them, listen to them, see how each of them makes you feel …….. Now that you have this screen in front of you, we are going to make a little journey…... I want you to project your local health center or the hospital you usually visit…. Look at it in front of you…. At three, we are going to enter into that screen, we are going to be the protagonists…..three! …… you begin to see more clearly the colors of this hospital …….two!…..... you get closer to the scene …… one! …….you begin to feel and hear everything inside ……..There you are!

You are in the waiting room, about to enter into the consultation. You did a blood test a few weeks ago as a health check. Nothing important, you are fine. Look at the people in the queue, eager to get in …… .It's your turn, you go to the door, push it, and see your doctor sitting greeting you normally, “the blood test, right?”. The doctor searches in the computer for your results while you feel calm but with some uncertainty. Your doctor begins to get serious and checks what he is reading…. ”What's wrong?”….. He is explaining that there are abnormalities

Imagined cancer diagnosis exercise (20m). Group guided meditation to promote death awareness during the intervention (English, continuation)

and you must do additional tests as soon as possible at the central hospital, in the oncology area…. ”how? It can’t be true! I'm fine "..... the doctor tries to calm you, but his glance has some uncertainty ..... You leave the office scared and incredulous about the news.

Several difficult days go by for you until your appointment in the oncology area. Once there, they do a biopsy, they are extracting a part of your body to analyze it …… They will call you again a week later so that the specialist can give you the results…..

The moment arrives…., you are sitting in front of the oncologist…. In the room, there is a strong smell…. You notice in your body that it is the moment of the truth…. The doctor tells you that, unfortunately, they have found a malignant tumor …….. it is yours …… he explains the situation with technical words …….. but you are only left with two things: the prognosis is uncertain, and a long and painful treatment awaits for you …….

You hardly pay attention to the way back home, but you are already at the door, waiting to break the news to your loved ones…. You walk in, and there they are, looking at you with fear in their eyes …… With all how difficult it is for you, you take your time to tell them and see their reaction ……

And now that your people already know, you go to your room and lie on the bed alone ……. The world continues as always, but nothing is no longer the same ..... On the bed, different emotions may begin to come to you. “It can't be true” ……., “If I feel good physically now” ……, “Why me, so young?” ……, “What have I done to deserve this?”…...

You pick up your phone and start desperately searching on the internet for the prognosis and the solution. However, it is not known what the cure is …… you only find cases with your disease that die in a few months and others that are miraculously cured …… Reading these cases you may get various sensations ……. "This may end badly, it could be the end of everything” ..... “My plans and dreams can no longer be achieved” ..... “What I love the most can disappear forever” ..... “I have to live with that suffering, without anyone can take it off, not even accompany me completely. ”……

Maybe what goes through your head is the time you have left, assuming the reality ..... Ask yourself what is the most important thing for you in life, in what do you want to invest your time from now on ..... without knowing how much life remains…..Take your time to reflect on that ……

Imagined cancer diagnosis exercise (20m). Group guided meditation to promote death awareness during the intervention (English, continuation)

Perhaps this journey, imagining yourself with a cancer diagnosis, is not easy for you. So I thank you for your courage….. We really never know how much we have left. We live in inertia, thinking that we are eternal, that there is always more time …….. Do you ask yourself these basic questions frequently? ...., if not, what prevents you from doing so? ..... in your day to day, are you doing what really matters to you? ..... Being honest with yourself, would you like to start doing something else from this moment? ..... what would that be exactly? .....

If you already know the answers to these questions, keep them in a safe place inside you …… They can be recorded on the screen that your mind has created ……. so that, as you have done today, you can access them anytime you want .....

And now….., begin to leave behind this space that you have created with your imagination…, feel yourself here again…., in this room …… Turn your attention to your body sitting on the chair …… If you wish, you can start moving your feet ……, your hands ……, your mouth ..... Breathe at your own beat ……. Let your everyday thoughts and feelings return ….., and little by little, remembering the journey you have experienced today, you can open your eyes.

An existential conversation (1h 15m). Open-ended questions applied during the individual sessions of the intervention

1. ¿Cómo responderías a la pregunta quién soy yo?¿Qué te ha caracterizado a lo largo de tu vida? / *How would you answer the question, "who am I?" What has characterized you throughout your life?*

2. ¿De qué te sientes orgulloso?¿Qué es lo más valioso que has hecho en tu vida?¿Por qué es valioso para ti? / *What are you proud of? What is the most valuable thing you have ever done in your life? Why is it valuable to you?*

3. ¿De qué te sientes agradecido hasta ahora? / *What makes you feel grateful so far?*

4. De lo que has hecho a lo largo de tu vida, ¿qué es de lo que más te has lamentado? / *From what you have done throughout your life, what have you most regretted?*

5. En una escala de 1-100, ¿cuánto sentido ha tenido tu vida hasta ahora? / *On a scale from 1-100, how much meaning has your life had so far?*

6. ¿Qué le ha dado sentido a tu vida? ¿Qué ha sido lo más importante? / *What has given meaning to your life? What has been the most important?*

7. En una escala de 1-100, ¿cómo te valoras como persona? / *On a scale from 1-100, how do you value yourself as a person?*

8. ¿Qué persona quieres ser dentro de 10 años?¿Cómo sería tu vida en ese momento? / *What person do you want to be in 10 years? What would your life be like at that time?*

9. Cuando estés en tu lecho de muerte, ¿cómo te gustaría que hubiera sido tu vida, y tú?------ En una escala de 1-100, ¿cuánto sentido habría tenido tu vida de haber conseguido ser así? / *When you are on your deathbed, how would you like that your life was, and you? ------ On a scale from 1-100, how much meaning would your life have, whether it had achieved to be that way?*

10. ¿Por qué y para qué te gustaría ser así?---- ¿Qué te gustaría dejar en esta vida?¿Por qué? / *Why would you like to be like this? ---- What would you like to leave in this life? Why?*

11. ¿Te gustaría ser recordado después de morir?¿Por qué? / *Would you like to be remembered after you die? Why?*

An existential conversation (1h 15m). Open-ended questions applied during the individual sessions of the intervention (continuation)

12. ¿Tendría sentido si lo que hubieras sido y hubieras hecho no tuviera un impacto/beneficio en otras personas? --------- En ese escenario, ¿cuánto sentido hubiera tenido tu vida en una escala de 1-100? / *Would it make sense if what you had been and had done had no impact/benefit on other people? --------- In that scenario, how much meaning would your life have had on a scale of 1-100?*

13. ¿Hay alguna diferencia entre esa persona que quieres ser y la que eres actualmente?¿Cuál/es? / *Is there any difference between that person you want to become and who you are now?*

14. ¿Qué es lo que te limita o impide acercarte más a esa persona que quieres ser? / *What limits or prevents you from getting closer to that person you want to be?*

15. ¿Qué es lo que menos te gusta de ti mismo?¿Hay algo que no terminas de aceptar de ti mismo o te gustaría mejorar? / *What do you like the least about yourself? Is there something you don't accept from yourself, or would you like to improve?*

16. ¿Cuáles son tus mayores problemas personales actualmente? / *What are your biggest personal problems nowadays?*

17. ¿Cuál es tu centro de atención actualmente?¿En qué inviertes más tiempo? / *What is your attention focus now? What do you spend the most time with?*

18. ¿Te gustaría mejorar algo en la forma de relacionarte con otras personas? / *Would you like to improve something in the way you interact with other people?*

19. ¿Estarías interesado en utilizar estas sesiones para progresar en este aspecto de tu vida?--- Apunta para ti mismo cómo podrías sacar provecho de las dinámicas de grupo con tus compañeros, en base a lo que has dicho que es importante en tu vida. / *Would you be interested in using these sessions to progress in this aspect of your life? --- Point out for yourself how you could take advantage of the group dynamics with your classmates, based on what you said that is important in your life.*

Questions to generate interpersonal closeness by Aron et al. (1997). Applied in pairs during Session 4 of the intervention

1. ¿Qué constituye para ti un "día perfecto"? / *What would constitute a "perfect day" for you?*

2. ¿Tienes una corazonada secreta sobre la forma en que vas a morir? / *Do you have a secret hunch about how you will die?*

3. Nombra tres cosas que usted y su compañero/a parezcan tener en común. / *Name three things you and your partner appear to have in common.*

4. ¿De qué te sientes más agradecido en la vida? / *For what in your life do you feel most grateful?*

5. Si pudieras cambiar cualquier cosa de la forma en que fuiste criado, ¿cuál sería? / *If you could change anything about the way you were raised, what would it be?*

6. Cuéntale a tu compañero/a la historia de tu vida en cuatro minutos pero con tanto detalle como sea posible. / *Take 4 minutes and tell your partner your life story in as much detail as posible.*

7. Si pudieras despertarte mañana habiendo adquirido una cualidad o una habilidad, ¿cuál sería? / *If you could wake up tomorrow having gained any one quality or ability, what would it be?*

8. ¿Hay algo que hayas soñado hacer desde hace mucho tiempo? ¿Por qué no lo has hecho? / *Is there something that you've dreamed of doing for a long time? Why haven't you done it?*

9. ¿Cuál es el mayor logro de tu vida? / *What is the greatest accomplishment of your life?*

10. ¿Qué es lo que más valoras en una amistad? / *What do you value most in a friendship?*

11. ¿Cuál es tu recuerdo más preciado? / *What is your most treasured memory?*

12. ¿Cuál es su recuerdo más terrible? / *What is your most terrible memory?*

Questions to generate interpersonal closeness by Aron et al. (1997). Applied in pairs during Session 4 of the intervention (continuation)

13. Si supieras que dentro de un año vas a morir súbitamente, ¿cambiarías en algo la forma en que vives ahora? ¿Por qué? / *If you knew that in one year you would die suddenly, would you change anything about the way you are now living? Why?*

14. ¿Qué papel desempeñan en tu vida el amor y el afecto? /*What roles do love and affection play in your life?*

15. Alternadamente, di algo que consideres una característica positiva de tu compañero/a. Menciona un total de cinco características. / *Alternate sharing something you consider a positive characteristic of your partner. Share a total of 5 items.*

16. ¿Qué tan cercana y cálida es tu familia? ¿Sientes que tu infancia fue más feliz que la de la mayoría? / *How close and warm is your family? Do you feel your childhood was happier than most other people's?*

17*. ¿Quién ha sido la persona más importante en tu vida?¿Cómo ha sido tu relación con ella? / *Who has been the most important person in your life? How has your relationship with him/her been?*

18. Cada uno hace tres declaraciones verdaderas usando "nosotros". Por ejemplo: "Los dos estamos en esta sala sintiendo…" / *Make 3 true "we" statements each. For instance, "We are both in this room feeling…".*

19. Complete esta frase: "Quisiera tener a alguien con quien compartir…" / *Complete this sentence: "I wish I had someone with whom I could share…".*

20. Si llegaras a ser amigo íntimo de tu compañero/a, di qué sería importante que ella supiera. / *If you were going to become a close frined with your partner, please share what would be important for him or her to know.*

* Question modified for the study.

Questions to generate interpersonal closeness by Aron et al. (1997). Applied in pairs during Session 4 of the intervention (continuation)

21. Dile a tu compañero/a qué te gusta a ti de él/ella; se muy honesto esta vez y di cosas que posiblemente no le dirías a alguien que acabaras de conocer. / *Tell your partner what you like about them; be very honest this time saying things that you might not say to someone you've just met.*

22. ¿Cuándo fue la última vez que lloraste con otra persona? ¿A solas? / *When did the last cry in front of another person? By yourself?*

23. Dile a tu compañero/a algo que ya te guste a ti de él/ella. / *Tell your partner something that you like about them already.*

24. ¿Qué es algo demasiado serio para bromear al respecto? / *What, if anything, is too serious to be joked about?*

25. Si fueras a morir esta noche, sin poder comunicarte con nadie, ¿qué sería lo que más lamentarías no haberle dicho a alguien? ¿Por qué no se lo has dicho? / *If you were to die this evening with no oportunity to communicate with anyone, what would you most regret not having told someone? Why haven't you told them yet?*

26. ¿Qué muerte de algún familiar sería para ti la más perturbadora? ¿Por qué? / *Of all the people in your family, whose death would you find most disturbing? Why?*

27. Exponga un problema personal y pregúntele a su pareja cómo lo manejaría ella. Asimismo, pídale a su pareja que le diga cómo parece que usted se siente respecto del problema que eligió. / *Share a personal problem and ask your partner's advice on how he or she might handle it. Also, ask your partner to reflect back to you how you seem to be feeling about the problem you have chosen.*